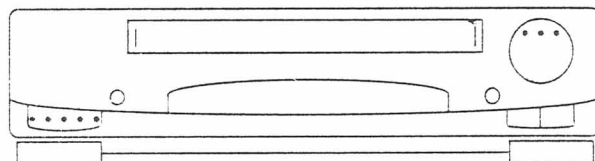
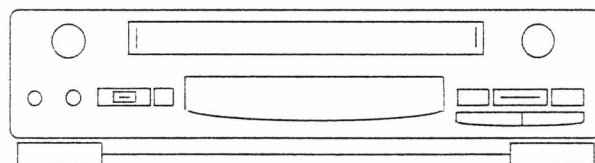


Service Service Service

VR254/55



VR454/55



Service Manual

VR254/55 & VR454/55 are video cassette recorders with a TV-reception part and electronic timer, suitable for recording and playing back TV-signals which meet the PAL TV-standard.

The signals are recorded on tape according to the VHS-standard.

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Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.



PHILIPS

CS 567 93

SECTION 1 DISASSEMBLY

1.1 DISASSEMBLY

1.1.1 Top cover

1. Take out 4 screws (A) and a screw (B).
2. To remove the top cover, slide in direction of arrow and lift away.

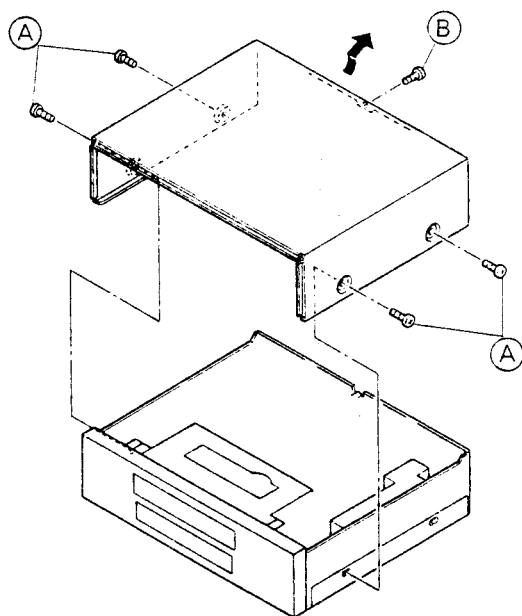


Fig. 1-1-1 Top cover

1.1.2 Front panel assembly

1. Remove the top cover.
2. Carefully disengage 2 tabs (a) of the front panel assembly from the upper side of the chassis.
3. Pull the front panel assembly forward you to disengage 3 tabs (b) of the front panel assembly from the bottom of the chassis, then remove the front panel assembly.

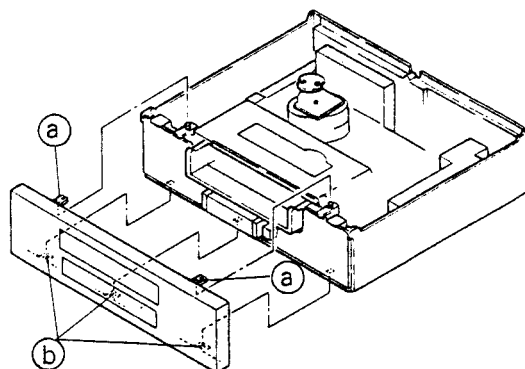


Fig. 1-1-2 Front panel assembly

1.1.3 Bottom cover

1. Remove the top cover.
2. Disengage 9 claws (a) from the bottom of the chassis.
3. Disengage the bottom cover and 1 springs (b) from bottom of the chassis.

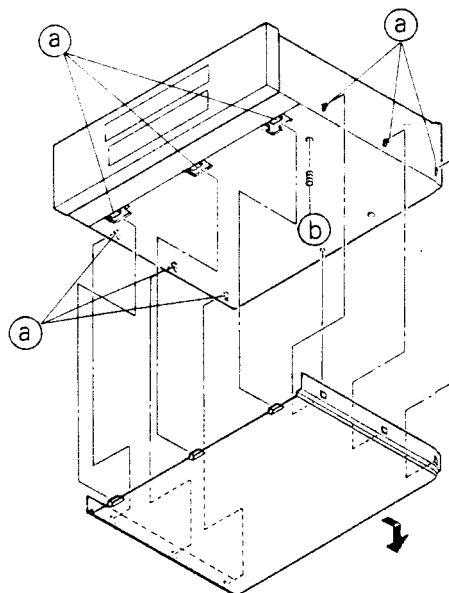


Fig. 1-1-3 Bottom cover

1.1.4 FRONT board assembly

1. Remove the top cover and front panel.
2. Disengage 6 claws (a) from the chassis.
3. Disengage 5 claws (b), then remove the FRONT board assembly in direction of arrow.

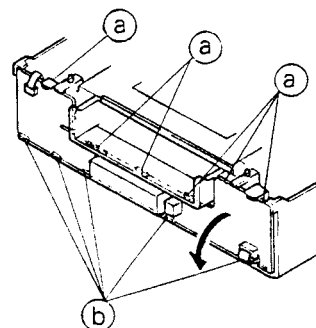


Fig. 1-1-4 FRONT board assembly

1.1.5 Cassette housing assembly

1. Remove the top cover and front panel.
2. Take out 4 screws F and 2 screws M.
3. Disengage 2 claws a from the holder.
4. Remove the cassette housing assembly in direction of arrow.

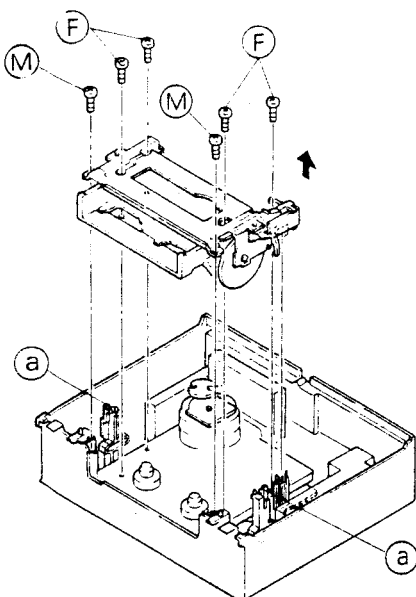


Fig. 1-1-5 Cassette housing assembly

1.1.6 PRE/REC board assembly

1. Remove the top cover.
2. Take out 2 screws G.
3. Disconnect connector CN502 from the PRE/REC board assembly.
4. Remove the PRE/REC board assembly with the shield in direction of arrow.

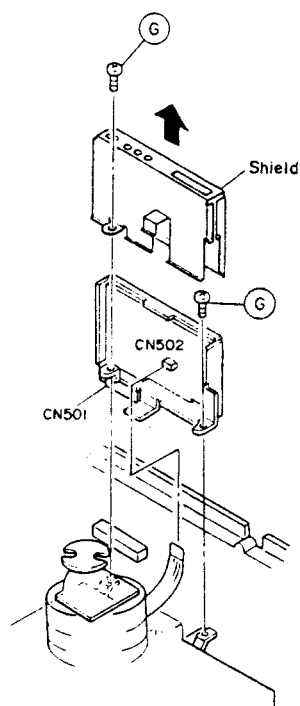


Fig. 1-1-6 PRE/REC board assembly

1.1.7 Drum assembly

1. Remove the top cover.
2. Disconnect a connector of stator assy.
3. Take out 3 screws L and washer then remove the cleaner assy and drum assembly.

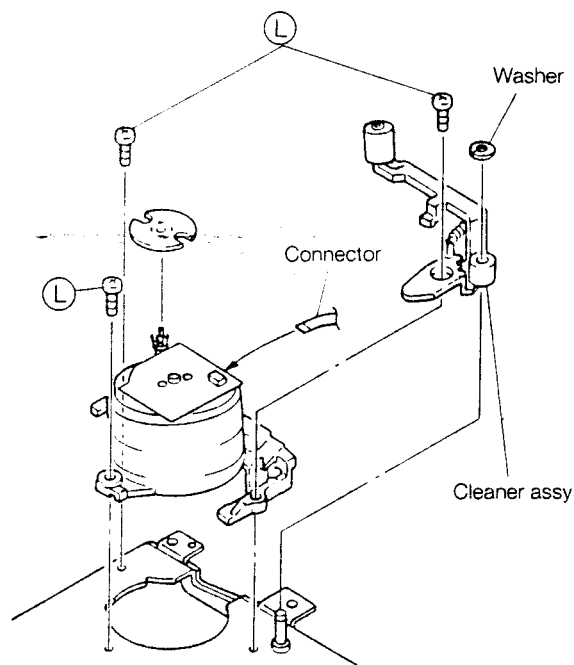


Fig. 1-1-7 Drum assembly

1.1.8 Main deck assembly

1. Remove the top cover, front panel and cassette housing assembly.
2. Take out 1 screw J and K, then remove the Bracket.
3. Take out 1 screws N and disengage 3 connectors a from the MAIN deck assembly.
4. Remove the MAIN deck assembly in direction of arrow.

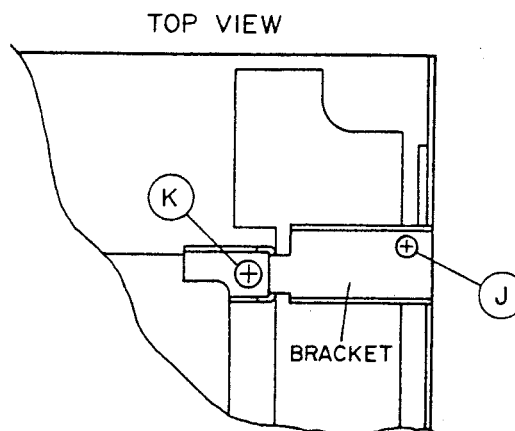


Fig. 1-1-8 Main deck assy

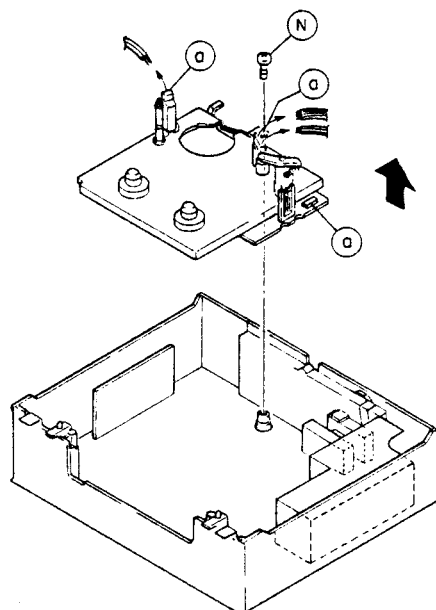


Fig. 1-1-9 MAIN deck assy

1.1.9 MAIN board assembly

1. Remove the top cover, front panel, cassette housing and main deck assy.
2. Take out 3 screws (L) and 1 screw (P).
3. Remove the holder (b) and disengage 2 claws (a) from the chassis.
4. Remove the MAIN board assembly in the direction of arrow.

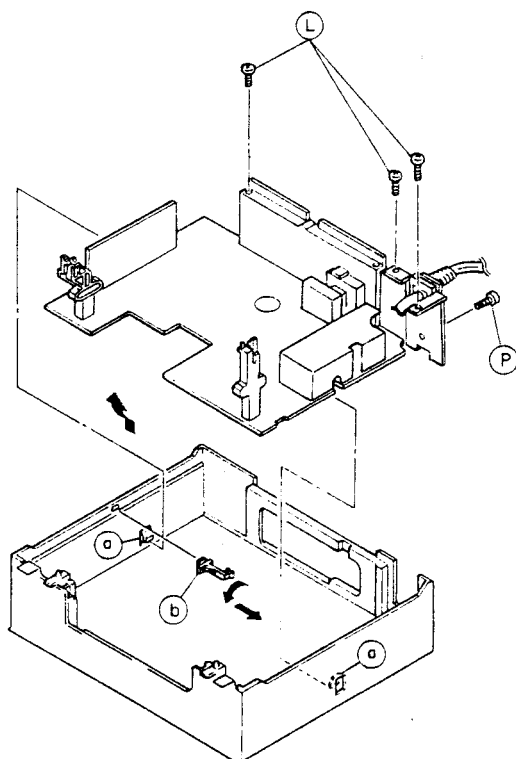


Fig. 1-1-10 MAIN board assy

1.1.10 Cassette housing installation

Note: Observe the mechanical phase and position (see figure) when installing the cassette housing assembly. If these are incorrect, the system will not operate properly even when tape is inserted.

1. Check that the marks of the control cam and pinch roller cam are aligned. If necessary, turn the worm clutch by hand to adjust the position.

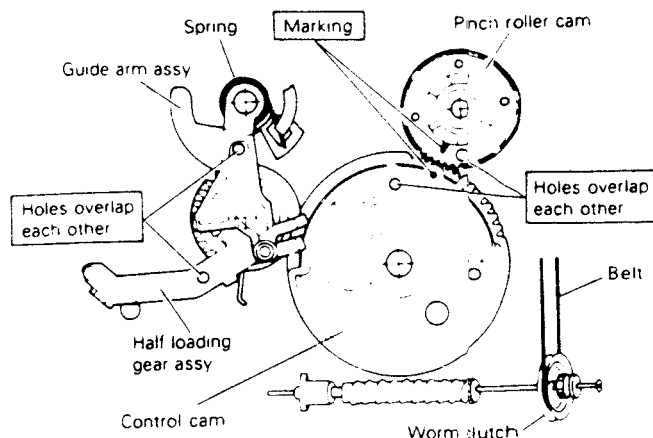


Fig. 1-1-11 Control cam and pinch roller cam position

2. Confirm that the clutch of the worm clutch assembly is locked. If necessary, engage the lock.

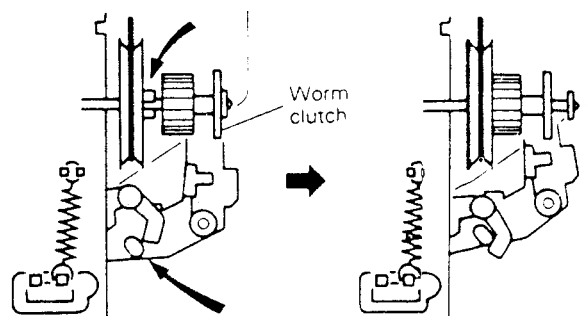


Fig. 1-1-12 (a) Not locked Fig. 1-1-12(b) Lock engaged

3. Install the front panel as shown in Fig 1-1-12 and re-engage the tabs. Supply power and use a spare cassette to check for normal loading and eject operations.

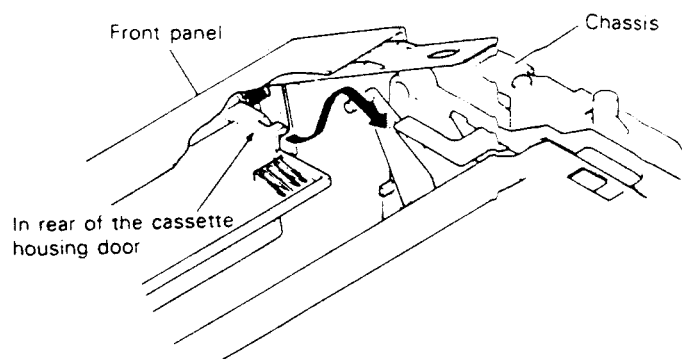


Fig. 1-1-13 Cassette housing door

1.2 SERVICE POSITION

1. Remove the top cover, front panel assembly and front board assembly.
2. Take out 4 screws (A), 1 screws (B) 2 screws (C); 1 screw (D) and 1 screw (E) as shown in Fig. 1-2-1.
3. Remove the holder b and disengage 2 claws a from the chassis.
4. Remove the mechanism assembly (including cassette housing assembly) and main board assembly out of the chassis as show in Fig. 1-2-2.
5. Overturn the mechanism assembly and main board assembly.
6. Connect the flat wires of (CN1, CN2)-the front board assembly to the main board assembly. Then check the pattern side of main board as shown on Fig. 1-2-3.

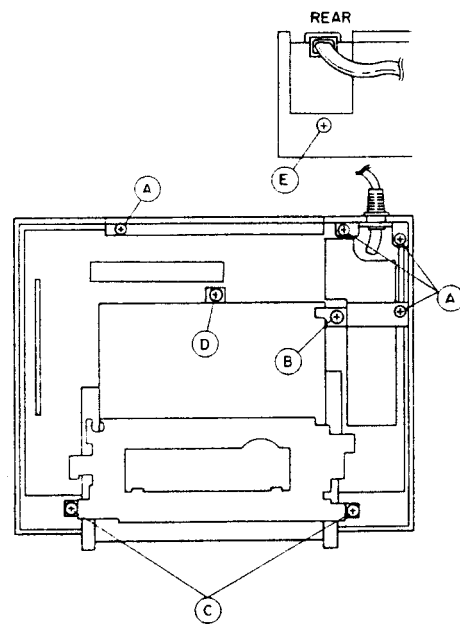


Fig. 1-2-1

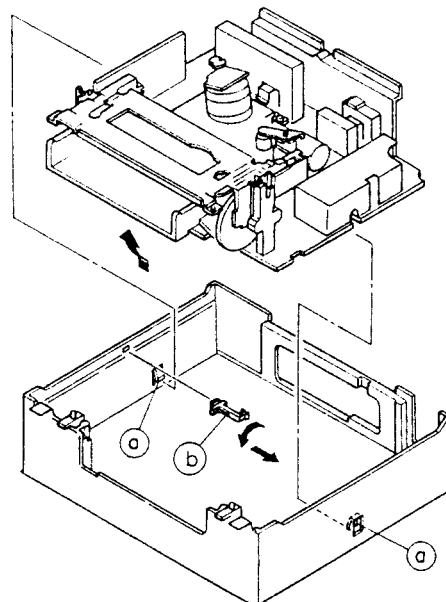


Fig. 1-2-2

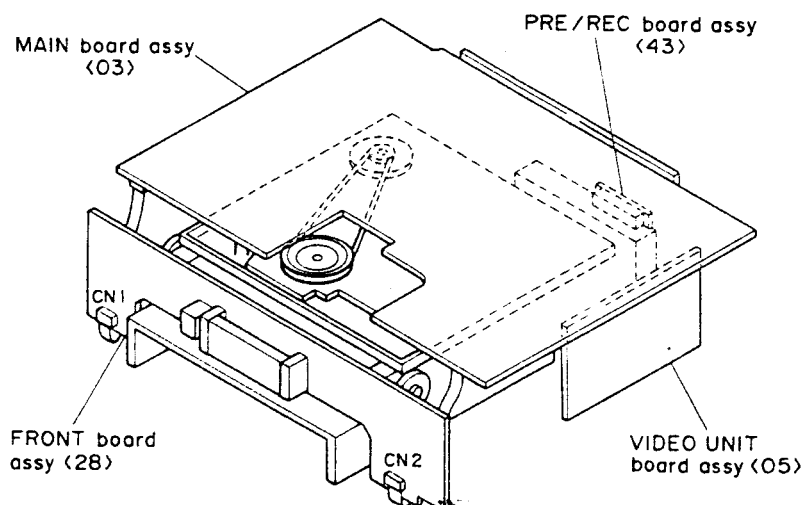


Fig. 1-2-3

SECTION 2 MECHANISM ADJUSTMENT

2.1 PREPARATION

2.1.1 Precautions

- 1) Disconnect VCR from AC power before soldering.
- 2) Avoid imparting stress to wires when disengaging connectors.
- 3) Determine and correct the cause of difficulty before proceeding to adjustments. Do not disturb settings unnecessarily.
- 4) Use care not to damage tabs, claws, etc. during repairs.
- 5) Install the cassette housing assembly only when the mechanism is in the Eject or Stop mode position. In the Eject mode, the internal holder of the housing is fully raised. This is fully lowered in the Stop mode.
- 6) When installing the front panel assembly, be sure to engage the housing door with the door lever of the cassette housing assembly. If this is omitted, the door will not open at Eject and the cassette cannot be removed.
See Sec.1 DISASSEMBLY.

2.1.2 Check without cassette housing

Mechanism operations can be observed easily by removing the cassette housing assembly. Note the following.

- 1) Disable the photo transistor sensor (END SENSOR) on the main-deck by applying an opaque cover.
- 2) Connect pins 2 and 3 of Main board connector CN601.
- 3) Select the desired modes with the operation buttons. However, notice that without tape, setting for the reverse direction modes produces the Stop mode after a few seconds due to absence of the reel sensor output.

2.1.3 Manual removal of loaded tape

In event of failure which leaves the tape in the loaded position, remove it by the following procedure.

- 1) Take off the top cover and main deck assy in order to wind the tape on the reel.
See Sec.1 DISASSEMBLY.
- 2) Turn the mode motor belt by hand in the unloading direction to return the loading posts to the stop position, refer Fig. 2-1-1.

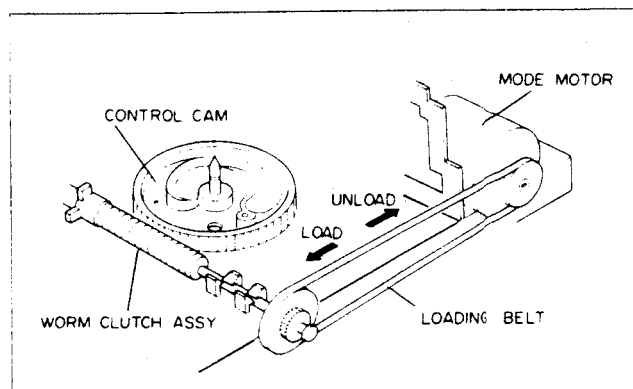


Fig. 2-1-1

- 3) From the bottom, turn the clutch unit by hand to wind the slackened tape onto the reel.

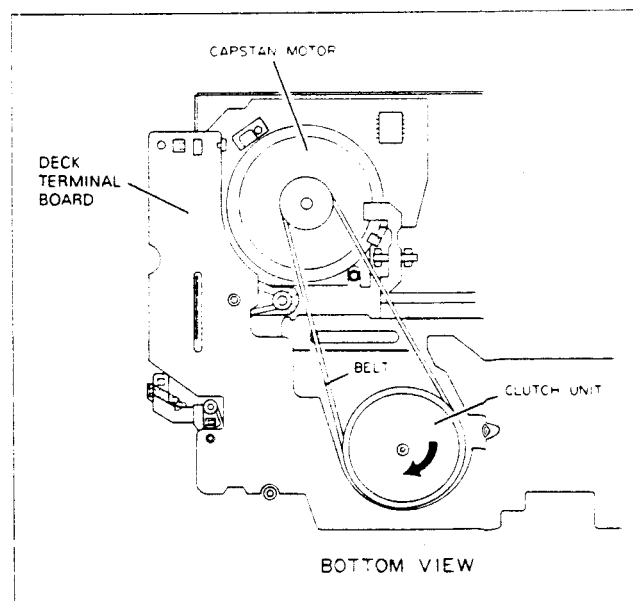


Fig. 2-1-2

- 4) Turn the mode motor further to where the cassette holder begins moving in the unloading direction, then remove the cassette tape.

Note: Turn the mode motor and clutch unit alternately in order to avoid damaging the tape. It is important to avoid scratching the tape in the mechanism.

2.1.4 Test equipment

Alignment tape (SP) 4822 397 30262	Alignment tape (LP) 4822 397 30261	Torque gauge 4822 395 50262	Back tension cassette gauge 4822 395 90615
A/C head positioning tool 4822 395 90916	Roller driver 4822 395 90904	Presetting unit 4822 395 90915	

Table 2-1-1

2.2 MAIN MECHANISM PARTS

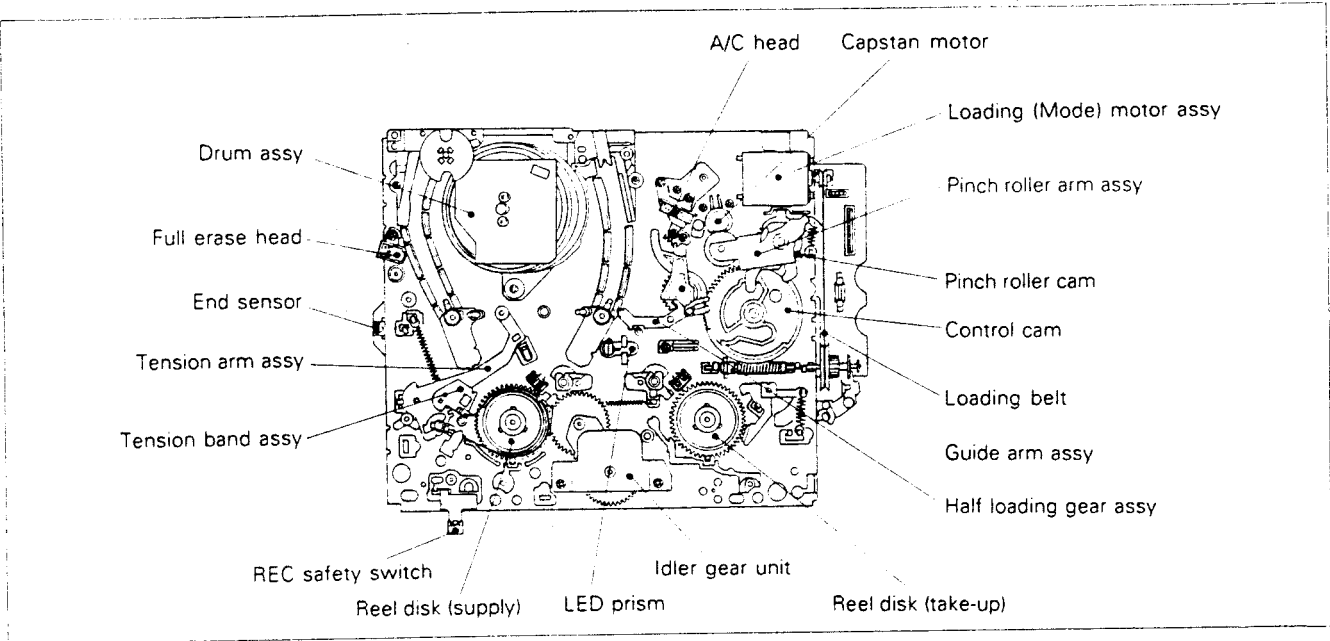


Fig. 2-2-1 Top view of main-deck

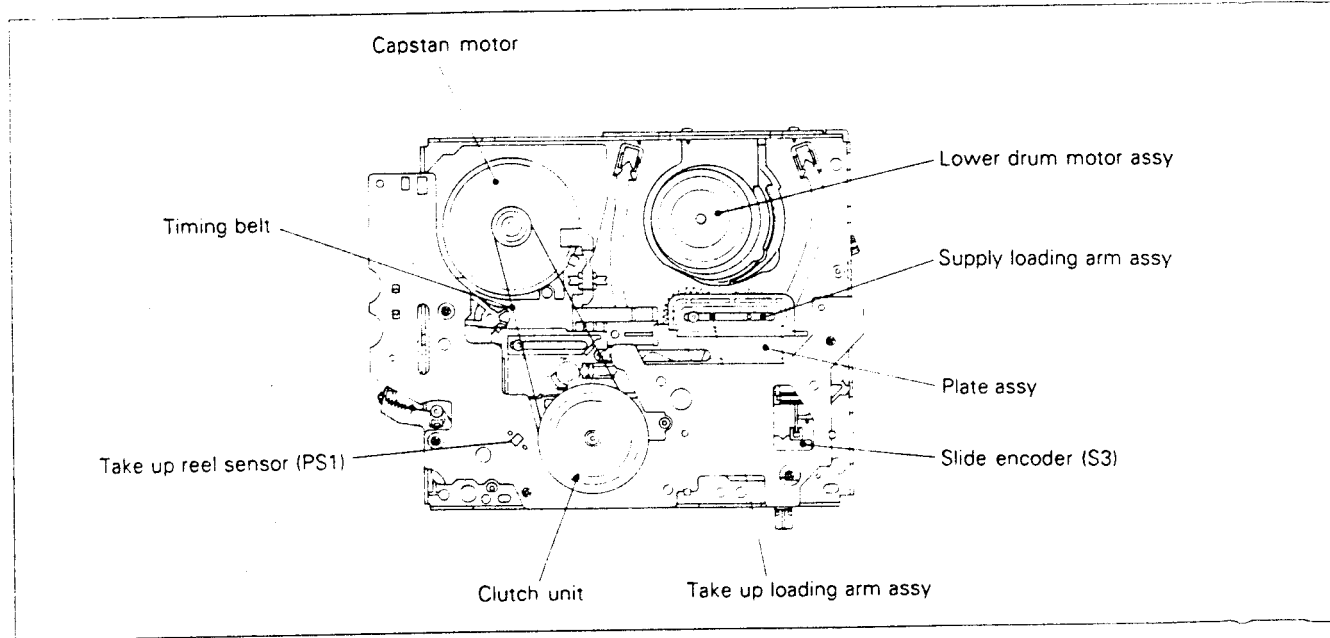


Fig. 2-2-2 Bottom view of main-deck

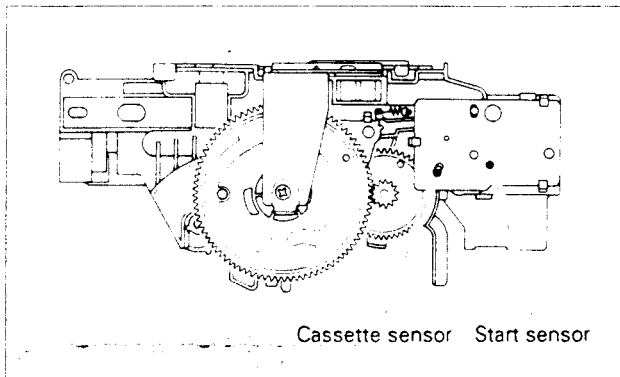


Fig. 2-2-3 Side view of cassette housing

2.2.1 Cleaning

Periodic cleaning of the tape transport system is desirable, but ordinarily not feasible in practice. Therefore, perform cleaning when a set is brought in for repairs or maintenance. Contamination of the video heads, tape guides and brushes can detract from playback picture quality and in extreme cases, even damage the tape. For cleaning, use a fine-mesh cotton cloth (about the texture of a white dress-shirt) moistened in alcohol.

- To clean the video heads, press the moistened cloth gently against the upper drum with fingertip and turn the drum by hand.
- Do not use a vertical stroke, as this may damage the heads.

2.2.2 Lubrication

Oil and grease do not normally require periodic replenishing. Apply only when replacing lubricated parts (also clean and replace lubrication of mating parts if soiled).

For parts and points to apply oil and grease, refer to the exploded views of the mechanism assembly. Before oiling, clean with alcohol.

Apply one or two drops of oil.

Avoid excess oil.

- 1) Table 2-2-1 indicates the oil and grease used in this set. Use these or recommended locally available equivalents.

Category	Part No.
Oil	COSMO-HV56
Grease	KANTO-G-31KAV

Table 2-2-1

- 2) Grease is not required for a replacement cassette housing assembly, as this has been applied at the factory.

Note: Stir grease that has been stored for an extended period.

2.3 INSPECTION AND MAINTENANCE

This product employs rotary and moving parts which wear out in the course of usage. Periodic inspection, cleaning, lubrication and maintenance are therefore important for ensuring maximum performance. Worn parts must also be replaced as and when required.

2.3.1 Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning, lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions. However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary.

Also note that rubber parts may deform in time, even if the set is not used.

System	Parts Name	Operation hours						
		250	500	750	1000	1250	1500	2000
Tape Transport	Upper drum assy	★	★	★	○	★	○	○
	A/C head	★			○			○
	Pinch roller arm assy							
	Full erase head							
	Tension arm assy							
	Lower drum assy							
	Capstan motor (Shaft)	★	★	★	★	★	★	★
	Half loading gear assy							
Drive	Guide arm assy							
	Capstan motor							○
	Loading belt			○				○
	Mode motor assy			○				○
	Reel disk (Supply)			○				○
	Reel disk (Take-up)			○				○
	Clutch assy			○				○
	Worm clutch assy							○
Others	Plate assy							○
	Brush assy			○				○
	Tension band assy			○				○

★ : Cleaning

○ : Inspection or Replacement if necessary

Table 2-3-1

2.4 MAIN PARTS REPLACEMENT AND ADJUSTMENT

2.4.1 Stator assembly

- 1) Take out 2 screws (A).
- 2) Raise the Stator Assembly in the direction indicated by the arrow to remove it (also remove the Inertia Roller).
- 3) Remove the flat cable.
- 4) To reinstall, first secure the flat cable, then insert 2 screws (A).
- 5) After reinstalling, be sure to perform switching point adjustment.

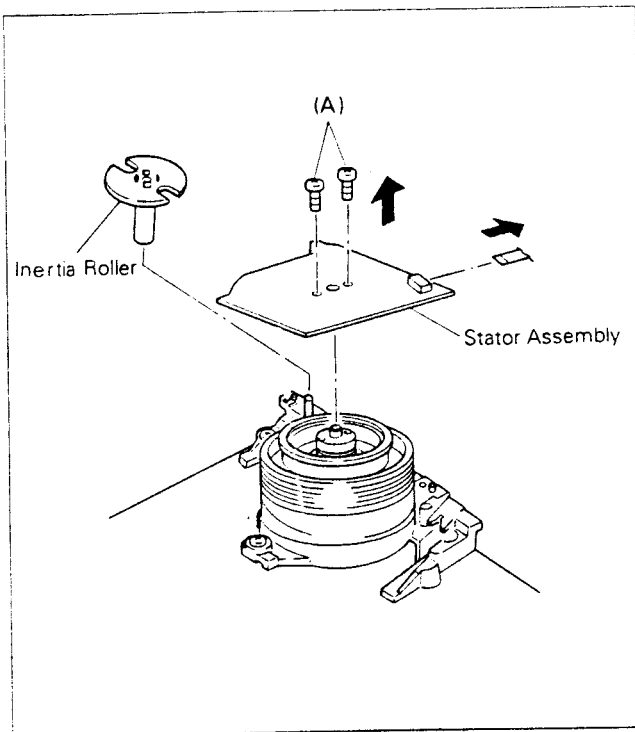


Fig. 2-4-1

2.4.2 Rotor assembly

- 1) Remove the Stator Assembly.
- 2) Take out 2 screws (B) and remove the Rotor Assembly.

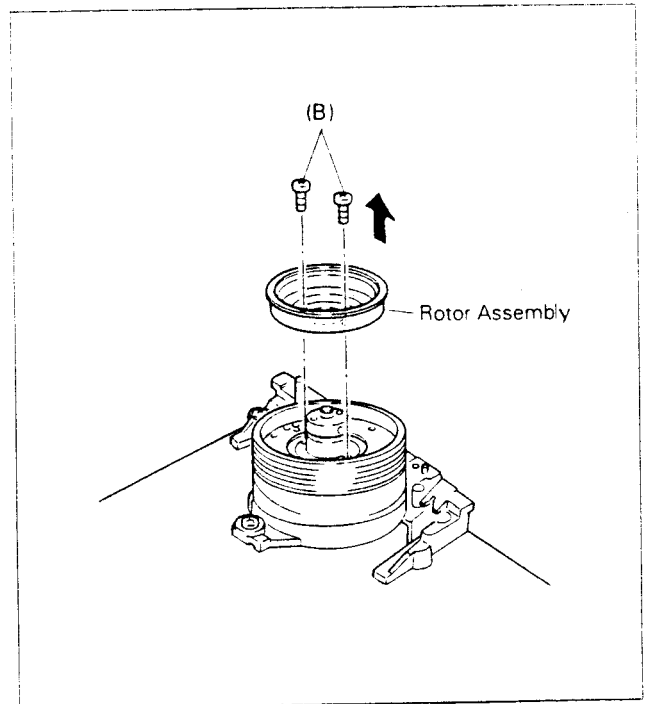


Fig. 2-4-2

Note: A normal picture will not be obtained unless the phase is properly aligned when installing the Rotor Assembly. Also note there are three types of Rotors.

- 3) Align the Upper Drum and Rotor Assembly phase as indicated in Fig. 2-4-3.
- 4) Overlap holes (a) of the Upper Drum with holes (b) of the Rotor Assembly (align holes in 3 locations) and secure with 2 screws (B) (see Fig. 2-4-3).

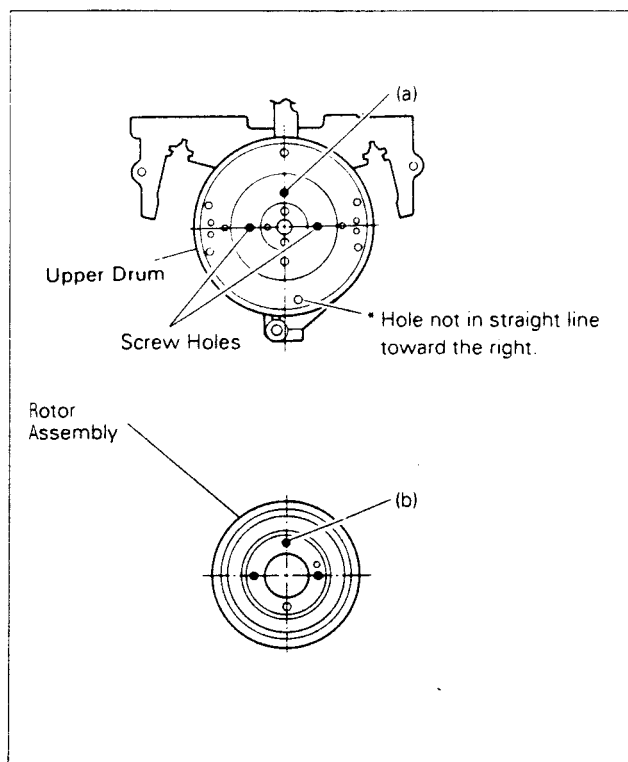


Fig. 2-4-3

2.4.3 Drum subassembly

- 1) Disengage the PRE/REC AMP board connector and flat cable.
- 2) Take out 3 screws (C) and remove the Drum Subassembly.

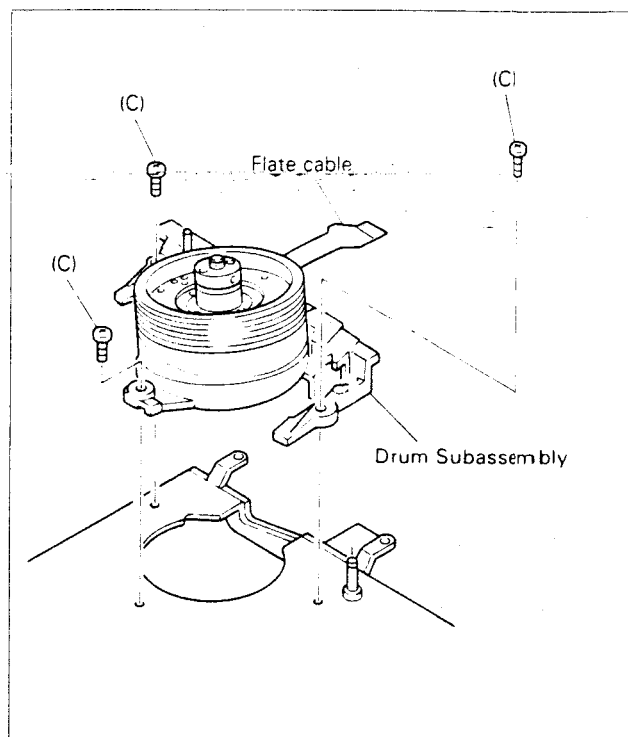


Fig. 2-4-4

2.4.4 Upper Drum assembly

1. Removal

- 1) Remove the Stator and Rotor Assemblies.
- 2) Use a 1.5 mm hexagonal wrench to loosen the Collar Assembly screw and remove the Collar Assembly.
- 3) Remove the Upper Drum Assembly and use tweezers to remove the Washer.

Note: If the Brush is replaced, do not apply the grease to the contacts.

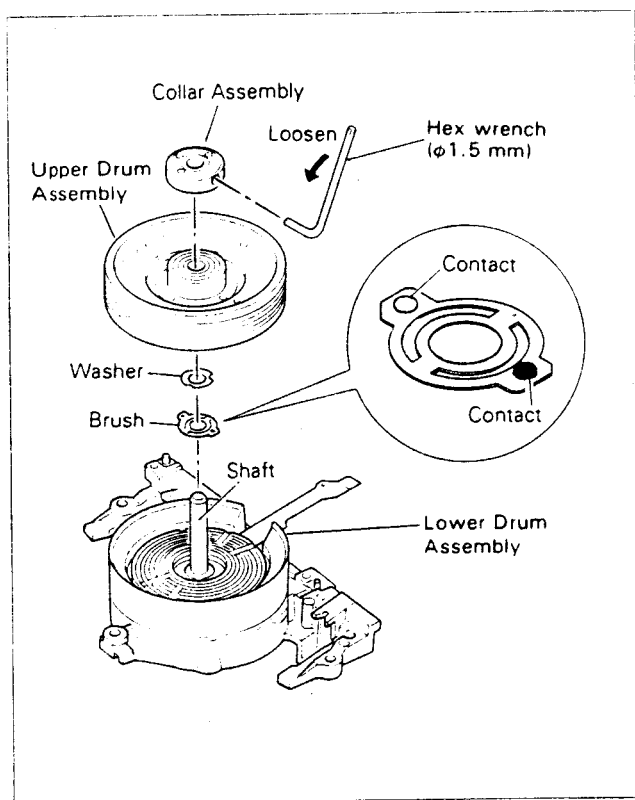


Fig. 2-4-5

2. Installation

- 1) Use an air brush to clean the Lower Drum Assembly and the coil section of the new Upper Drum Assembly.
- 2) Set a new Washer on the Drum shaft (see Fig. 2-4-6).

Note: Be sure to use the new Washer supplied with the replacement Upper Drum Assembly.

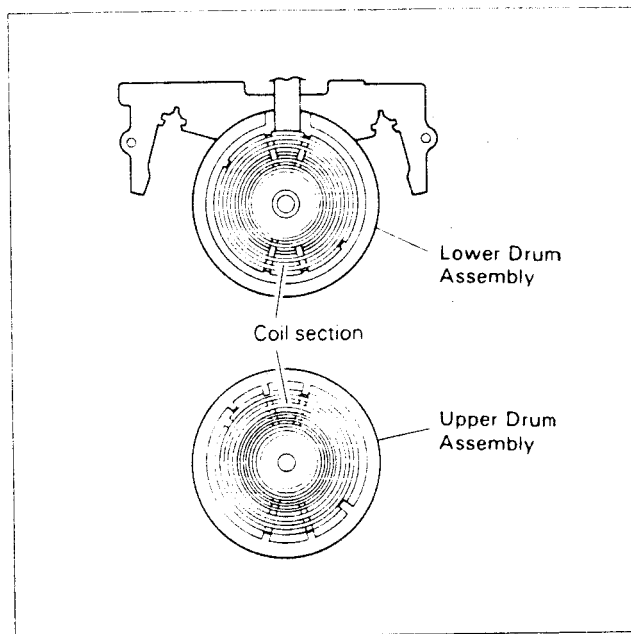


Fig. 2-4-6

- 3) Note the top and bottom of the Collar Assembly and determine the position as indicated in Fig. 2-4-7.

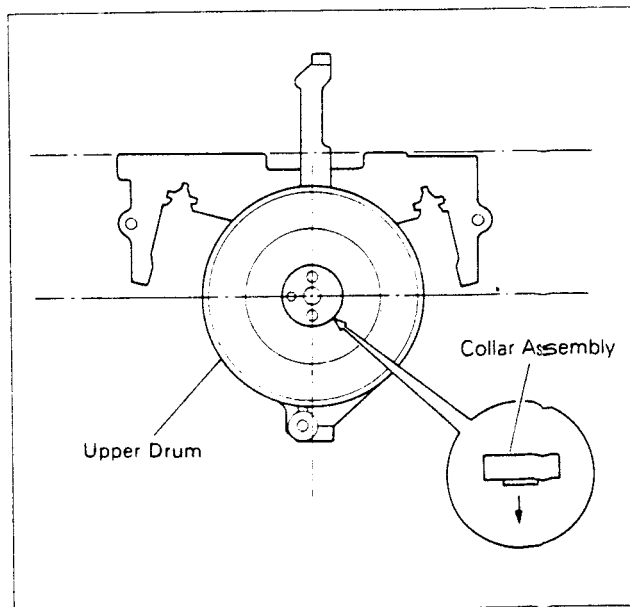


Fig. 2-4-7

- 4) While pressing the Collar Assembly evenly from above with the fingertips, secure the hexagonal screw.

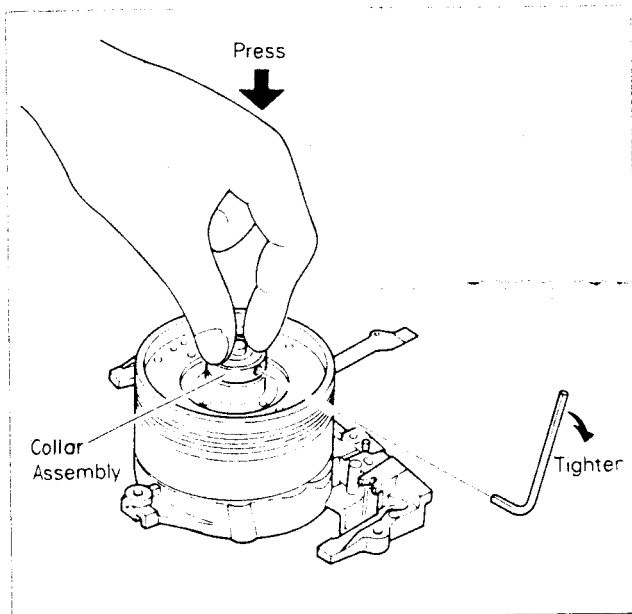


Fig. 2-4-8

- 5) After installing, gently turn the Upper Drum by hand and confirm normal rotation.
 6) Install the Rotor and Stator Assemblies.
 7) Clean the Upper and Lower Drum Assemblies and perform the following adjustments;

- Switching Point Adjustment
- Interchangeability Adjustment (be sure to check EP mode)
- Recording color level Adjustment

2.4.5 Tension arm positioning

- 1) Remove the cassette housing, set the playback mode.
 (Refer to 2.1.2 Check without cassette housing)
 2) Turn the eccentric adjust pin to position the mark of the chassis with the tension arm tip as shown Fig. 2-4-9.

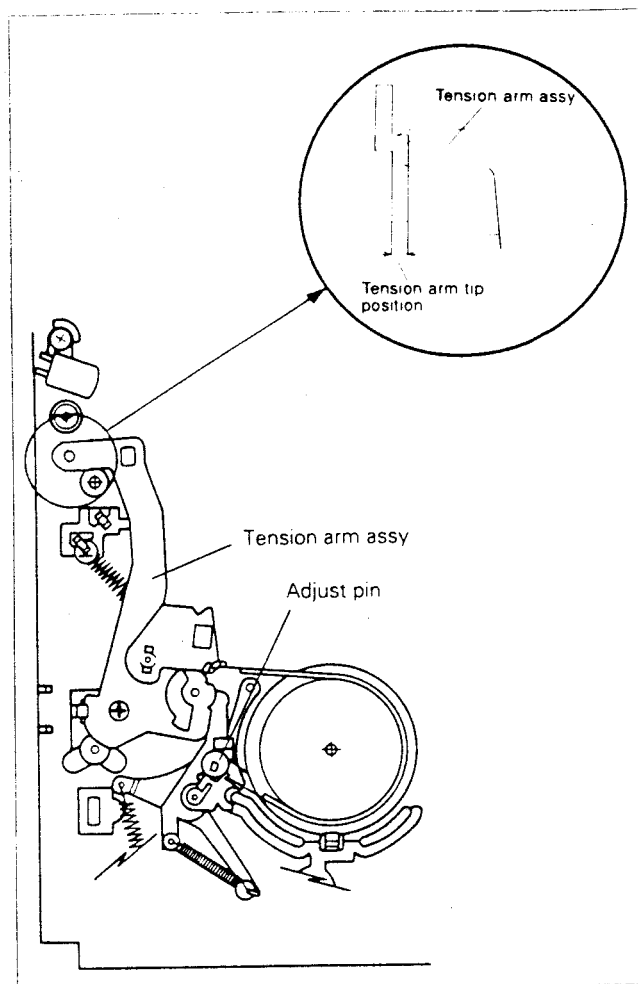


Fig. 2-4-9

Note: Normally, if the tension post position is properly adjusted, the back tension will assume the correct value. Use the back tension cassette gauge and confirm playback tension is 35 g-cm to 48 g-cm (13.8 g-inch to 18.9 g-inch).

2.4.6 Pinch roller cam position

- 1) Set the mechanism to the eject mode (cassette holder is locked in eject position).
- 2) Install the pinch roller cam so the largest hole near the gear teeth is aligned with the hole on the chassis.
- 3) Set the control cam on the deck with the hole in the groove aligned with the hole on the chassis. Observe that the small hole on the control cam and the mark on the pinch roller cam are aligned. (If the control cam does not fit readily, shift the loading arm and plate assembly within the range of mechanical play.)
- 4) Install the half-loading gear assembly with the hole aligned with the hole on the chassis. Secure with split washer.
- 5) Install the guide arm assembly with the hole aligned with hole on the chassis. Engage the spring properly.

Note: This is the correct mechanical alignment to install the cassette housing. The cassette housing should also be in the eject position.

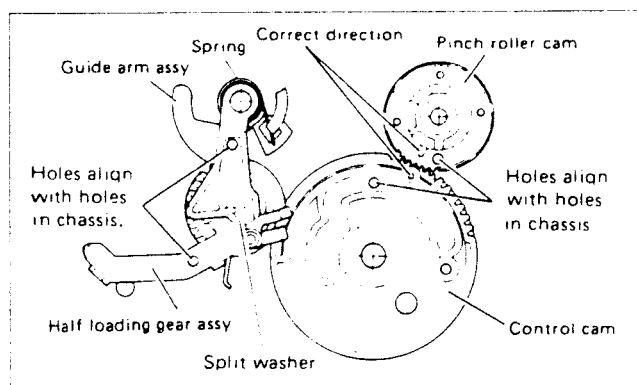


Fig. 2-4-10

2.4.7 Audio/control head height

- 1) Adjust the 3 screws (screw ①, ②, ③ in Fig. 2-5-1) to set the audio/control head height to 6.6 mm (0.26 in). Adjust all screws equally.
- 2) Perform interchangeability adjustments to obtain the specified control pulse and audio signal levels.

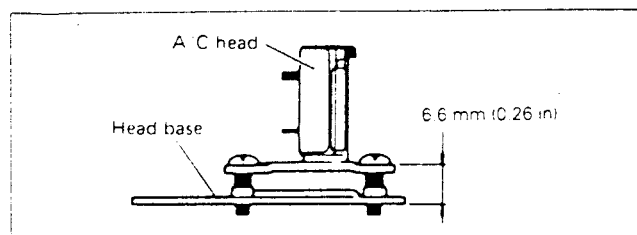


Fig. 2-4-11

Notes:

- It is very important to correctly adjust the control pulse and audio signal in addition to the mechanical tape path.
- Perform interchangeability adjustments after electrical adjustments.

2.4.8 Loading arm and plate assembly position

- 1) Set for Eject mode and remove the deck terminal board.
- 2) Check that the preset hole of the plate assembly is in the preset position. Temporarily insert a 3 mm (0.12 in) screw to hold the position.
- 3) By hand, hold the loading arms in the unloading (inner) position and set the plate assembly from above.
- 4) Install Red and White split washers. Remove temporary screw.
- 5) Move the mode motor belt by hand and confirm mechanism operation.

Note: Observe that the brake assembly pin is engaged with the plate assembly groove.

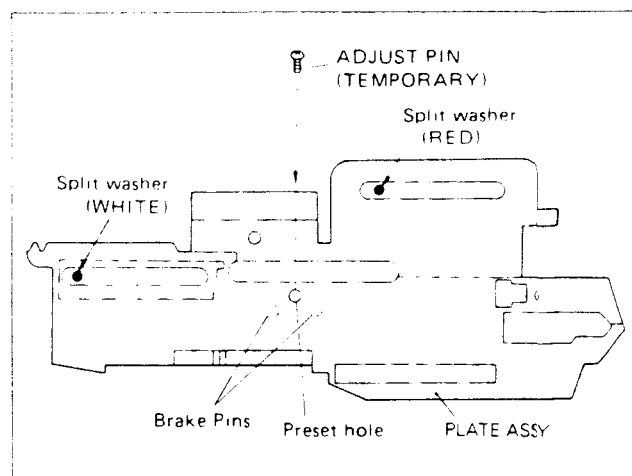


Fig. 2-4-12

2.4.9 Reel disk height

- 1) Measure the height of the reel disk above the main chassis.
- 2) Add or remove washers at the bottom of the reel disk to adjust for 12 mm (0.47 in). See Fig. 2-4-13.

Note: This adjustment is normally not needed. Perform after replacing the reel disk.

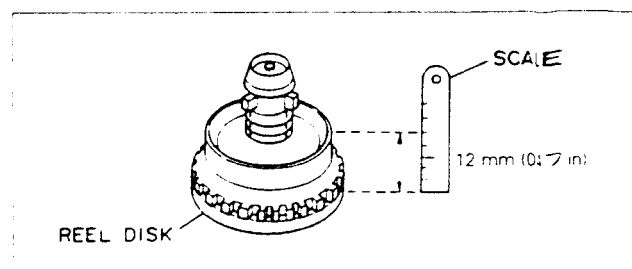


Fig. 2-4-13

2.5 TAPE INTERCHANGEABILITY ADJUSTMENT

Note: This adjustment is extremely important. However, it is normally not required during routine service. Perform only after replacing major components (A/C head, drum assembly, etc.).

2.5.1 Height and azimuth adjustment of A/C head

- 1) Connect the oscilloscope to the audio output jack on the rear of the deck.
- 2) Play back the stairstep portion (6 kHz, Mono) of the alignment tape.
- 3) Adjust Black Screw ② on the head base in Fig. 2-5-1 so that the output level is at a maximised.
- 4) Readjust Screw ① shown in Fig. 2-5-1 for maximum output.

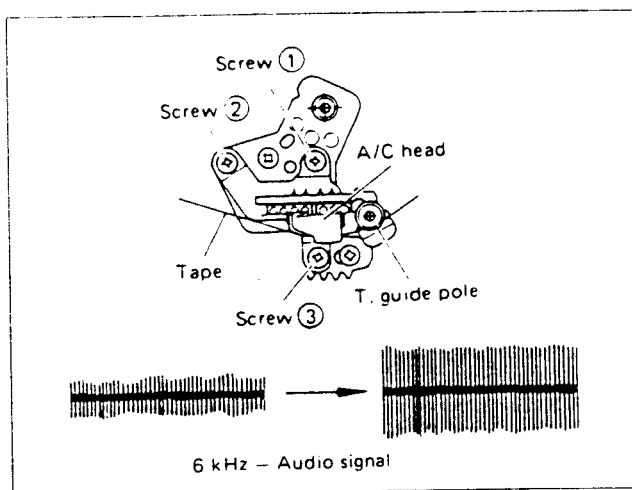


Fig. 2-5-1

2.5.2 Horizontal Position adjustment of A/C head

- 1) Play back the stairstep portion of the alignment tape.
- 2) Connect the oscilloscope to TP506 (PB FM) on the PRE/REC AMP board. Use TP511 (DRUM FF) as a trigger. Confirm that the RF envelope appears, as in Fig. 2-5-4.
- 3) Set the neutral manual tracking position, by simultaneously press of the (+) and (-) tracking buttons.
- 4) If adjustment is required, slightly loosen screws ④ and ⑤. Set A/C head positioning tool on the A/C head adjusting boss as shown in Fig. 2-5-2.
- 5) Turn the tool first to position the A/C head fully toward the capstan. Then gradually return it toward the drum and stop at the position of maximum FM waveform output level as shown in Fig. 2-5-4.
- 6) Tighten screw ⑤. Remove the tool and tighten screw ④.

- 7) Eject the tape and then re-insert again. Playback the Alignment Tape. Set the neutral manual tracking position. Push the tracking (+) button (count the number of pushes) until the maximum envelope is reduced to 1/2. Eject the tape and re-insert it again. Playback the Alignment Tape. Set the neutral manual tracking position. Push the tracking (-) button (count the number of pushes) until the maximum envelope is reduced to 1/2.
- 8) Confirm that the number of pushes are equal.

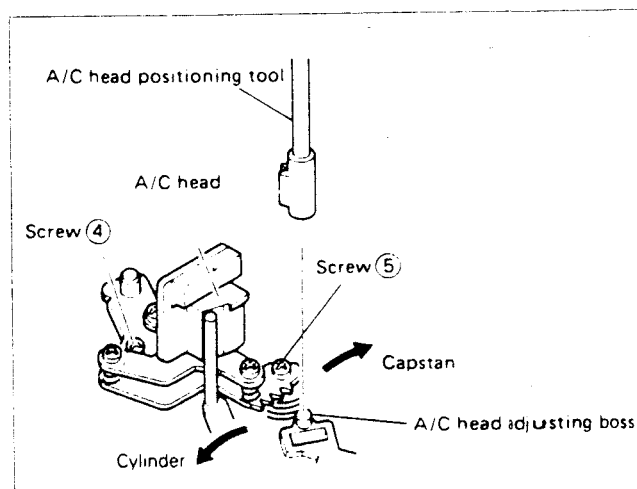


Fig. 2-5-2

2.5.3 Playback tracking

This is the most important adjustment. If incorrect, proper tracking will not be obtained in recording and playback. Other problems that may occur are noise in parts of the picture, poor color reproduction and picture instability.

- 1) Play back the stairstep portion of the alignment tape.
- 2) Connect the oscilloscope to TP506 (PB FM) on the PRE/REC AMP board. Use TP511 (DRUM FF) as a trigger. Confirm that the envelope appears, as in Fig. 2-5-4.
- 3) Operate the tracking adjustment (press the tracking buttons during playback) and set for maximum playback envelope waveform.
- 4) If adjustment is required, first slightly loosen the set screw located at the bottom of the guide rollers. Using the guide roller adjustment tool, adjust the supply and take-up guide rollers (refer to Fig. 2-5-3) to obtain the correct waveform. Refer to Fig. 2-5-5.

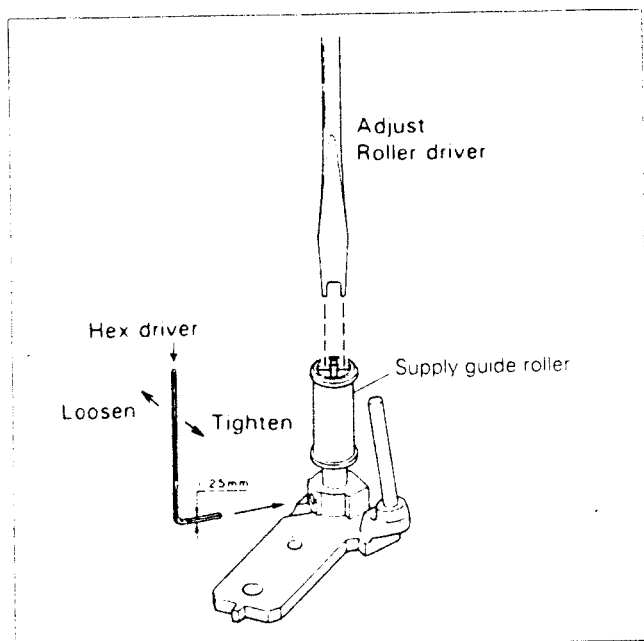


Fig. 2-5-3

- 5) By pushing the tracking buttons several times, vary the FM waveform output from maximum to minimum (and vice versa) gradually, and confirm that the waveform remains flat as in Fig. 2-5-6.
- 6) If the FM waveform varies and is not mostly flat, adjust the height of guide roller(s) until the RF waveform is as flat as possible.
- 7) Eject a tape and then playback tape again, since the height of guide rollers may move during adjustment. Confirm, when pushing the tracking (+) and (-) buttons, FM waveform variation is always flat.
- 8) After adjustment, confirm that the tape wrinkling does not occur at the roller upper or lower limits, as in Fig. 2-5-7.
- 9) Perform step 2.5.1 and 2.5.2.

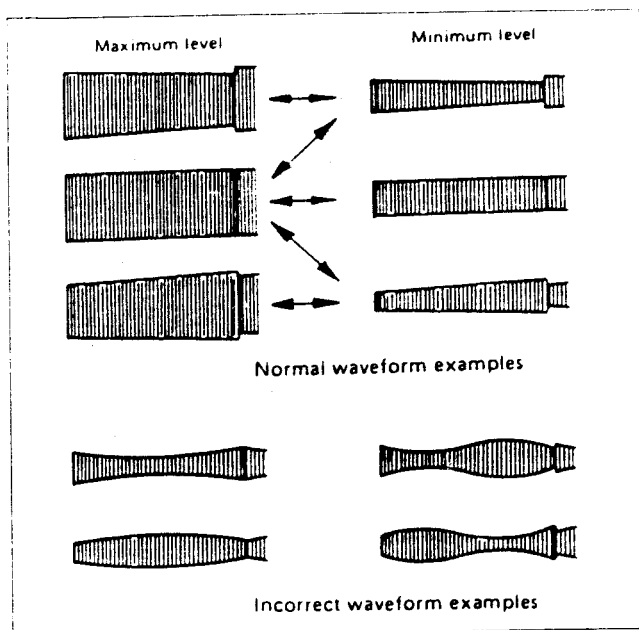


Fig. 2-5-4

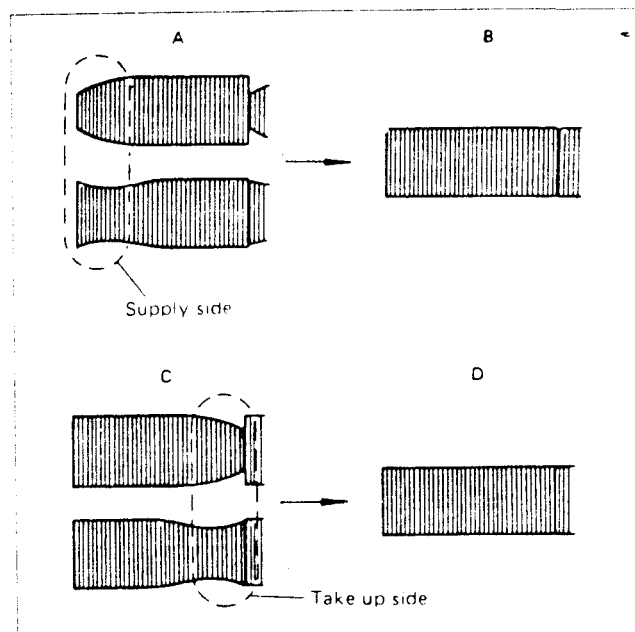


Fig. 2-5-5

- Correct variation of the waveform (always flat)



- Bad variation of the waveform

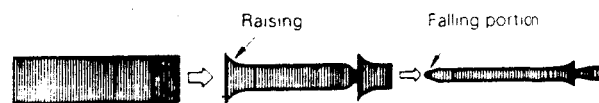


Fig. 2-5-6

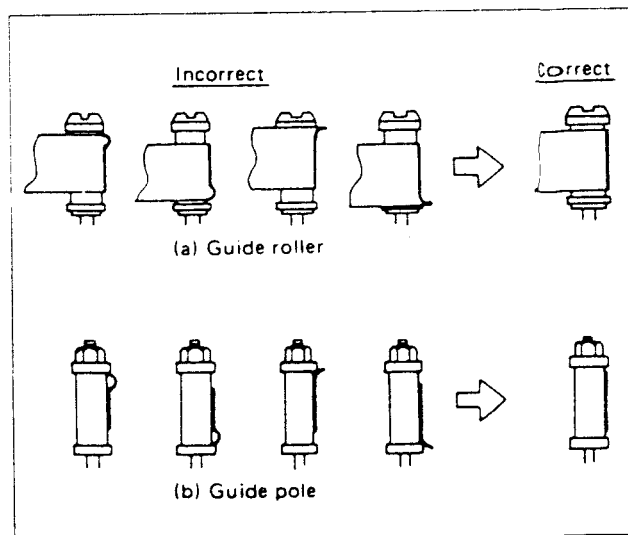


Fig. 2-5-7

SECTION 3 ELECTRICAL ADJUSTMENT

3.1 DECK SECTION ADJUSTMENT

3.1.1 PRECAUTION

Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipments is available.

1. Required test equipment

1. Colour television or monitor
2. Oscilloscope: wide-band, dual-trace, triggered delayed sweep
3. Frequency counter
4. Digital voltmeter
5. Signal generator: RF/IF sweep/maker
6. Signal generator: PAL colour bar, staircase
7. Recording tape

2. Required adjustment tools

Alignment tape (SP) 4822 397 30262	Alignment tape (LP) 4822 397 30261
Presetting unit 4822 395 90915	Adjustment driver 4822 395 50262
* SMC replacement tools 4822 395 90957	

*** Note:** It is convenient for replacing chip parts.

3. Colour bar signal, colour bar pattern and video sweep signal

• Colour bar signal of pattern generator

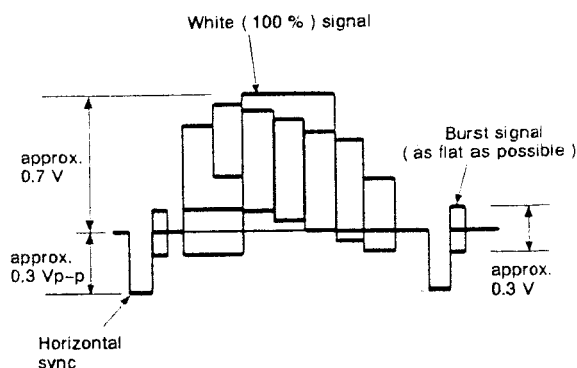


Fig. 3-1-1 Colour bar signal of pattern generator

• Colour bar signal

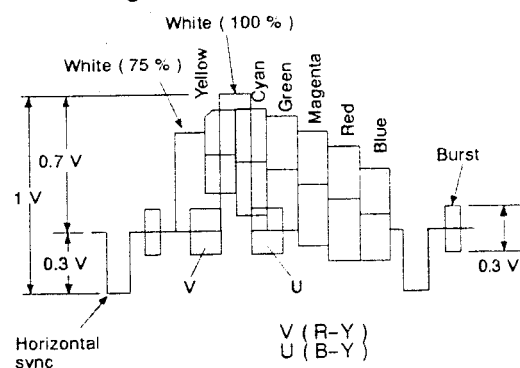


Fig. 3-1-2 Colour bar signal waveform

• Colour bar pattern

White	Yellow	Cyan	Green	Magenta	Red	Blue
(75 %)						
V	U	White 100%	Black			

Fig. 3-1-3 Colour bar pattern

• Video sweep signal

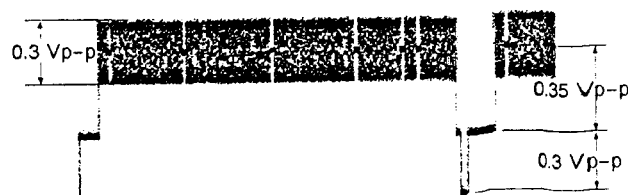


Fig. 3-1-4 Video sweep signal

3.1.2 SWITCHING REGULATOR CIRCUIT

Note: Unless otherwise specified, all measurement points and adjustment parts are located on the MAIN BOARD.

1. 5V DC output voltage

Signal	•TUNER
Mode	•SP •REC
Equipment	•Digital voltmeter
Measurement point	•TP802 (SWD 5 V) •TP801 (GND)
Adjustment part	•R855 (SW 5 V)
Specification	•5.2 ± 0.1 V DC

- 1) Connect a digital voltmeter to TP802 (SWD 5V) and TP801 (GND).
- 2) Adjust R855 for 5.2 ± 0.1 V DC.

3.1.3 SERVO CIRCUIT

Note: Unless otherwise specified, all measurement points and adjustment parts are located on the MAIN BOARD.

1. PB switching point

Signal	•Alignment tape (MH-2) •Stairstep
Mode	•PB •Digital tracking OFF
Equipment	•Oscilloscope
Measurement point	•TP210 (VIDEO OUT)
Trigger slope (-)	•TP511 (DRUM FF) [PRE/REC AMP BOARD]
Adjustment tool	•Presetting unit
Specification	•6.5 ± 0.5 H

Note: Use only buttons "E" and "F".
Depressing other buttons during adjustment may cause adjustment errors.

- 1) Connect an oscilloscope to TP210 and external trigger from TP511 (negative slope).
- 2) Playback the stairstep signal of the alignment tape.
- 3) Set the tracking control to the centre position by simultaneously pressing the (+) and (-) buttons.
- 4) Press the "A" button of the presetting unit.
- 5) Adjust by pressing "E" (+) or "F" (-) buttons of the presetting unit for position the trigger point 6.5 ± 0.5 H from V.sync.

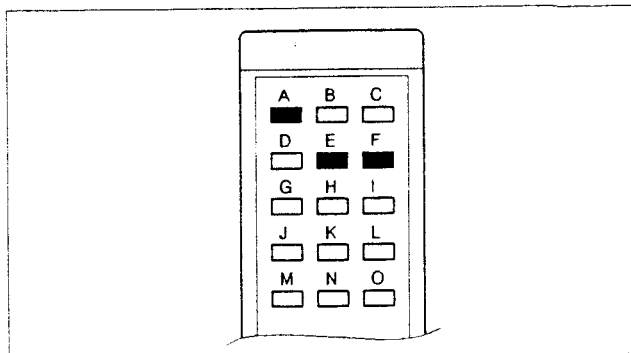


Fig. 3-1-5 Presetting unit

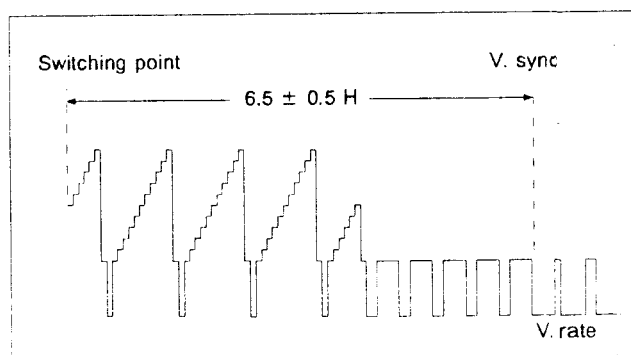


Fig. 3-1-6 PB switching point

2. Slow tracking preset

Signal	•Colour bar
Mode	•SP: VR254/55 •SP/LP: VR454/55 •REC → PB (SLOW) •Digital tracking OFF
Equipment	•TV-Monitor
Adjustment tool	•Presetting unit
Specification	•Minimum noise

Note: Set VCR to the mode A by remote controller.

- 1) Record a colour bar signal in the SP mode.
- 2) Playback recorded signal on the FWD slow mode.
- 3) Set the tracking control to the centre position by simultaneously pressing the (+) and (-) buttons.
- 4) Press the "A" button of the presetting unit.
- 5) Observe the display on a TV monitor and adjust for optimum noise condition (best tracking) by depressing "C" (+) or "B" (-) buttons of the presetting unit as required.
- 6) Depress the STOP button.
- 7) Confirm that the bar noise is not visible on the monitor in the slow mode.
- 8) Repeat steps 2) to 7) in REV slow mode (VR454/55 only).
- 9) Repeat steps 1) to 8) in LP mode (VR454/55 only).

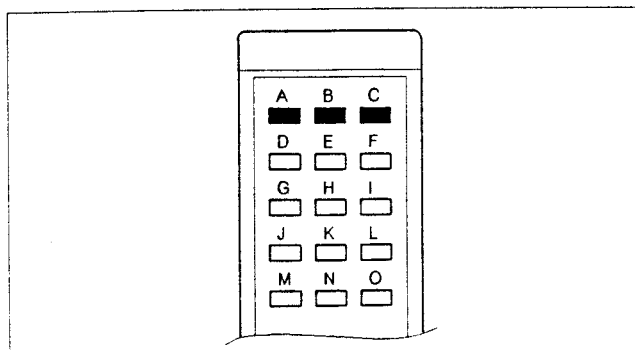


Fig. 3-1-7 Presetting unit

3.1.4 VIDEO CIRCUIT

Note: Unless otherwise specified, all measurement points and adjustment parts are located on the VIDEO UNIT BOARD.

Important:

Item 1. thru 6..

- 1) Ordinarily performing these adjustments is not required. Adjustments should be performed only if IC2 on the VIDEO UNIT BOARD has been replaced.
- 2) To adjust, replace fixed resistor with variable chip resistor, then adjust as required.

1. EE Y level

Signal	•Colour bar
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•TP210 (VIDEO OUT) (MAIN BOARD)
Adjustment part	•R42 (EE Y LEVEL)
Specification	• 2.00 ± 0.06 Vp-p (Unterminated)

- 1) Connect an oscilloscope to TP210.
- 2) Confirm that Y level is 2.00 ± 0.06 Vp-p. Unterminated.
- 3) If necessary, replace R42 with the variable chip resistor 4822 101 10889 and adjust it for 2.00 ± 0.06 Vp-p, as in Fig. 3-1-8.

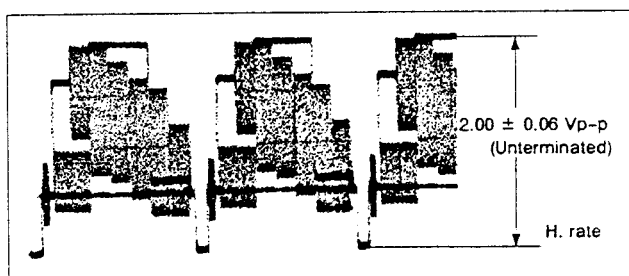


Fig. 3-1-8 EE Y level

2. White clip

Signal	•Colour bar
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•IC2 pin 22
Adjustment part	•R45 (W/D CLIP)
Specification	•WHITE CLIP : 190 ± 4 % •DARK CLIP : 145 ± 8 %

- 1) Connect an oscilloscope to IC2 pin 22.
- 2) Confirm that white clip is 190 ± 4 % and dark clip is 145 ± 8 %.
- 3) If necessary, replace R45 with the variable chip resistor 4822 101 10851 and adjust it 190 ± 4 % white clip and 145 ± 8 % dark clip, as in Fig. 3-1-9.

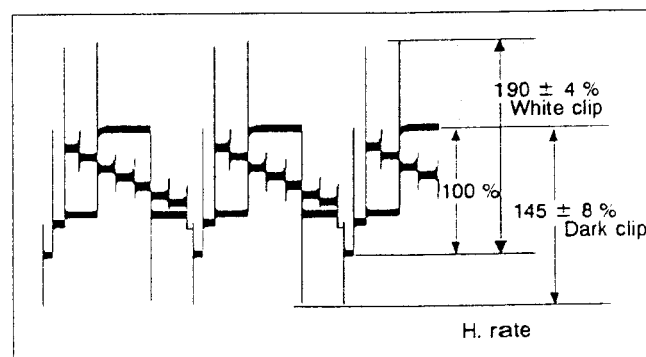


Fig. 3-1-9 White clip

3. Carrier & deviation

• Carrier

Signal	•No signal-VIDEO INPUT (Shorted RCA Phono Plug)
Mode	•EE
Equipment	•Frequency counter
Measurement point	•CN2 pin 5
Adjustment part	•R28 (CARRIER)
Specification	• 3.80 ± 0.04 MHz

- 1) Connect the frequency counter to CN2 pin 5.
- 2) Confirm that frequency is 3.80 ± 0.04 MHz.
- 3) If necessary, replace R28 with the variable chip resistor 4822 101 10892 and adjust it for 3.80 ± 0.04 MHz.

• Deviation

Signal	•Colour bar
Mode	•REC then PB
Equipment	•Oscilloscope
Measurement point	•TP210 (VIDEO OUT) [MAIN BOARD]
Adjustment part	•R29 (DEVIATION)
Specification	• 2.00 ± 0.06 Vp-p (Unterminated)

- Record and playback a colour bar signal.
- Confirm that Y level is 2.00 ± 0.06 Vp-p unterminated.
- If necessary, replace R29 with the variable chip resistor 4822 101 10851 and adjust it for 2.00 ± 0.06 Vp-p, as in Fig. 3-1-10.

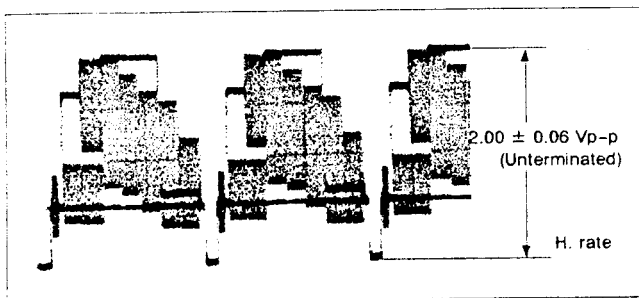


Fig. 3-1-10 Carrier & deviation

4. YNR level

Signal	•Colour bar
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•IC2 pin 9
Adjustment part	•R18 (N.C. BALANCE)
Specification	•Minimum DC step difference

- Connect an oscilloscope to IC2 pin 9.
- Confirm that DC step difference is minimum.
- If necessary, replace R18 with the variable chip resistor 4822 101 30673 and adjust it for minimum DC step difference, as in Fig. 3-1-11.

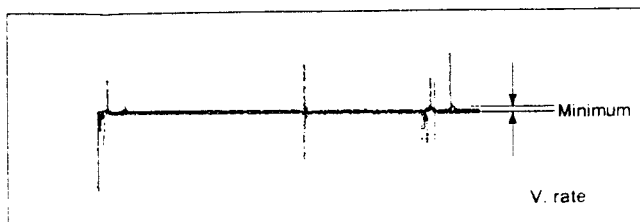


Fig. 3-1-11 YNR level

5. PB Y level

Signal	•Colour bar
Mode	•SP •REC then PB
Equipment	•Oscilloscope
Measurement point	•TP210 (VIDEO OUT) [MAIN BOARD]
Adjustment part	•R25 (PB Y LEVEL)
Specification	• 2.00 ± 0.06 Vp-p (Unterminated)

Note: Confirm that procedure 3.1.4-2. is correct before performing this adjustment procedure.

- Connect an oscilloscope to TP210.
- Record and playback a colour bar signal.
- Confirm that Y level is 2.00 ± 0.06 Vp-p unterminated.
- If necessary, replace R25 with the variable chip resistor 4822 101 10852 and adjust it for 2.00 ± 0.06 Vp-p, as in Fig. 3-1-12.

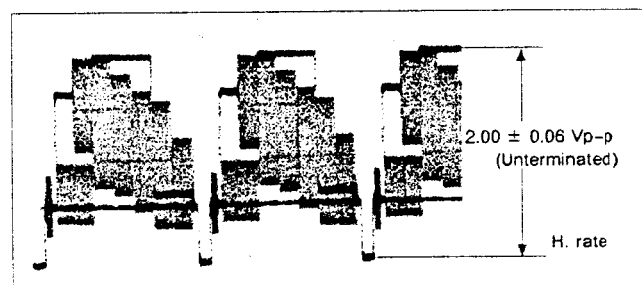


Fig. 3-1-12 PB Y level

6. REC colour level

Signal	•Colour bar
Mode	•SP •REC
Equipment	•Oscilloscope
Measurement point	•CN2 pin 11 (REC COLOUR)
Adjustment part	•R52 (REC COLOUR LEVEL)
Specification	• 200 ± 10 mVp-p

- Connect an oscilloscope to CN2 pin 11.
- Record the colour bar signal in SP mode.
- Confirm that colour level is 200 ± 10 mV p-p, as in Fig. 3-1-13.
- If necessary, replace R52 with the variable chip resistor 4822 101 10891 and adjust it for 200 ± 10 mVp-p.

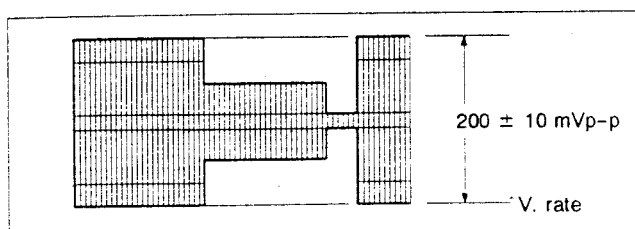


Fig. 3-1-13 REC colour level

3.1.5 TIMER CIRCUIT

Note: Unless otherwise specified, all measurement points and adjustment parts are located on the MAIN BOARD.

1. Timer clock

Signal	•No signal
Mode	•EE •AUX
Equipment	•Frequency counter
Measurement point	•IC601 pin 64
Adjustment part	•C614 (TIMER CLOCK)
Specification	•1024.008 ± 0.001 Hz (976.5549 ± 0.0010 μsec)

- 1) Connect the frequency counter to IC601 pin 64 and GND.
- 2) Connect a short wire between IC601 pin 33 and IC601 pin 63.
- 3) Short the leads of capacitor C616 once in order to reset IC601.
- 4) Adjust C614 for 1024.008 ± 0.001 Hz (976.5549 ± 0.0010 μsec).
- 5) Disconnect the short wire.

3.1.6 TUNER CIRCUIT

Note: Unless otherwise specified, all measurement points and adjustment parts are located on the IF UNIT BOARD.

1. RF AGC

Note: Before the following adjustment,

- 1) Connect a cable to ANT IN and terminate TV OUT with 75 ohms.
- 2) Set a TV channel signal generator as follows.
Video: 65 dBμ 75 Ω, colour bar 87.5 % modulation.
Audio: 55 dBμ 75 Ω, 1 kHz ± 50 kHz deviation.

《Factory Method》

Signal	•TV broadcasting
Mode	•Tuner
Equipment	•Oscilloscope •TV signal generator
Measurement point	•IF UNIT
Adjustment part	•IF VR
Specification	•-8.0 dB from maximum level (with minimum noise)

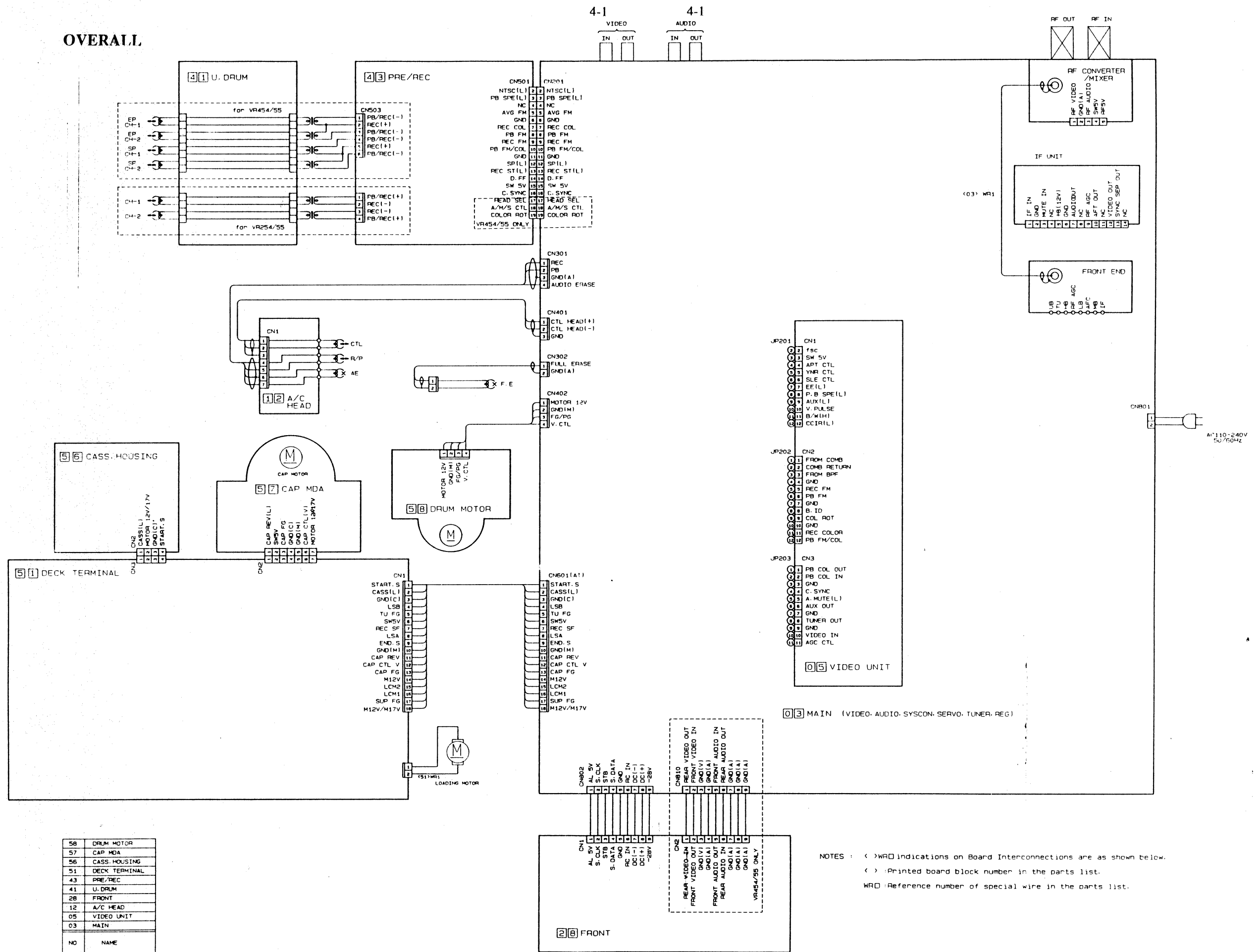
- 1) Connect an oscilloscope to IF terminal of U/V tuner (front end).
- 2) Adjust IF VR for maximum level, then adjust IF VR to reduce the IF level -8.0 dB from maximum level.

《Alternate Method》

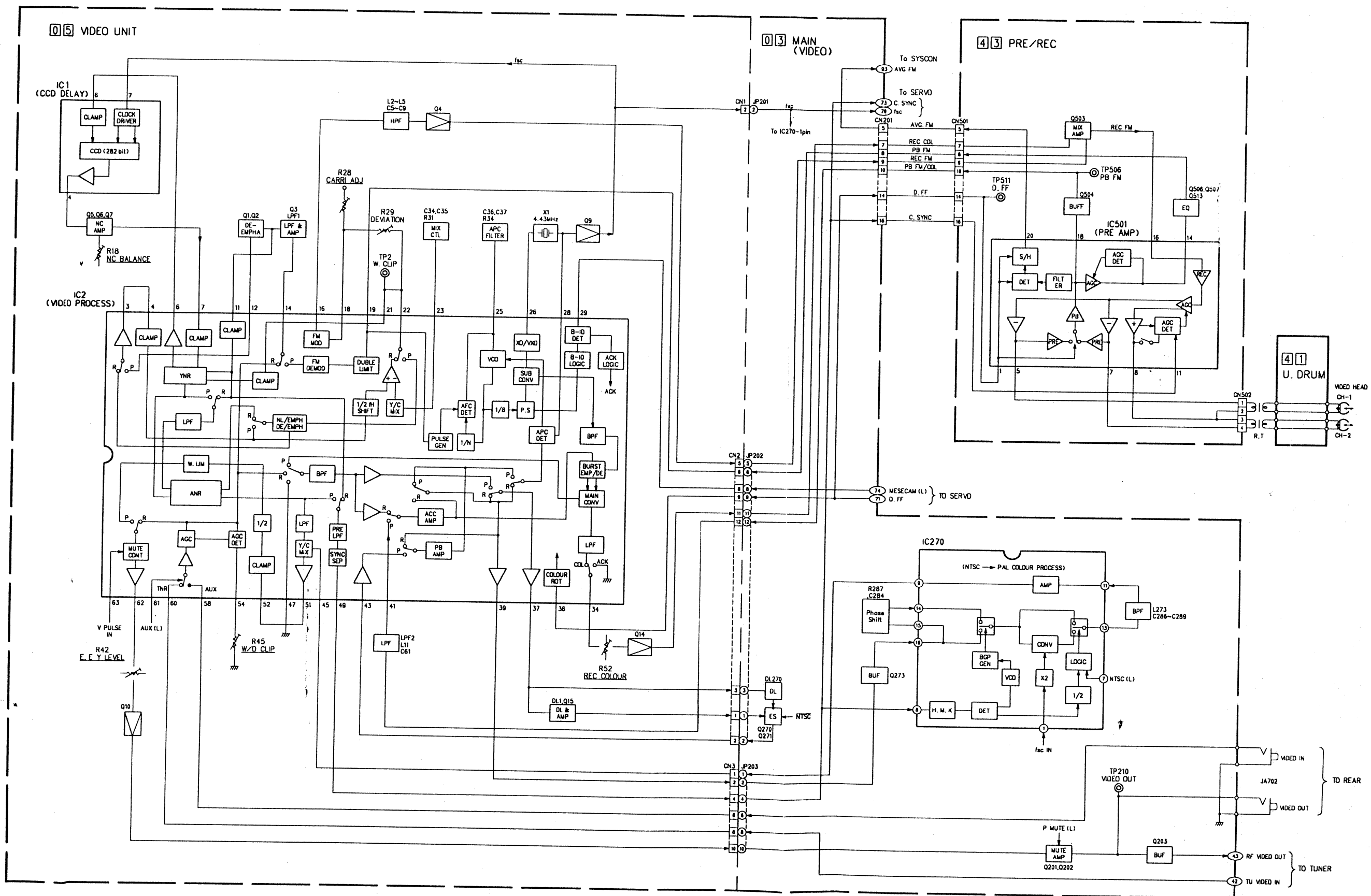
Note: Adjust IF VR (RF AGC) to correct for excess noise in the picture or when streaks cross interference occurs due to strong electrical fields.

- 1) Adjust IF VR to minimize noise or streaks on the TV screen.
- 2) Adjust for noisy picture with strong signal. Then adjust until noise just disappears. Select other channels to confirm proper pick-up of channels.

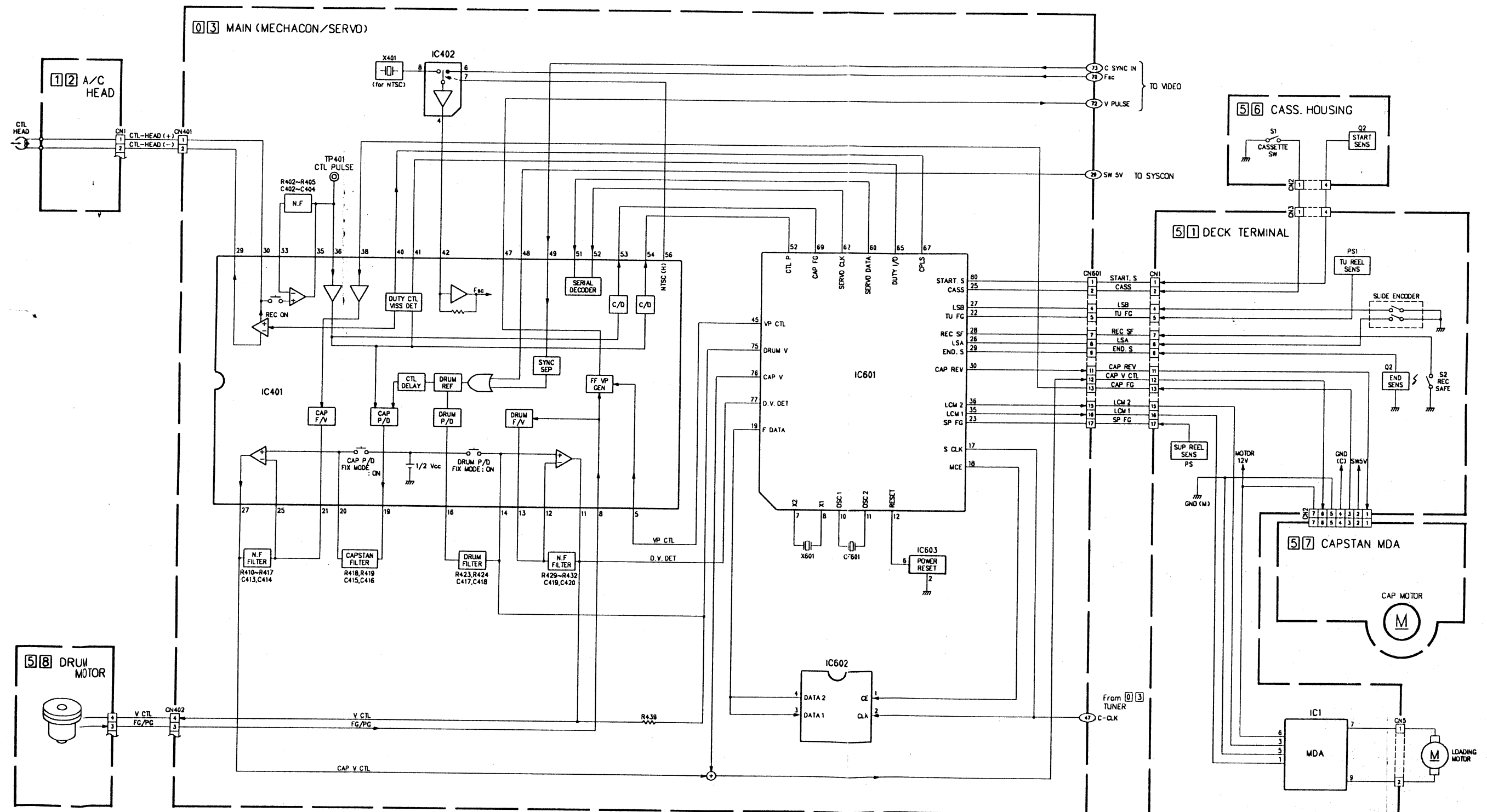
OVERALL



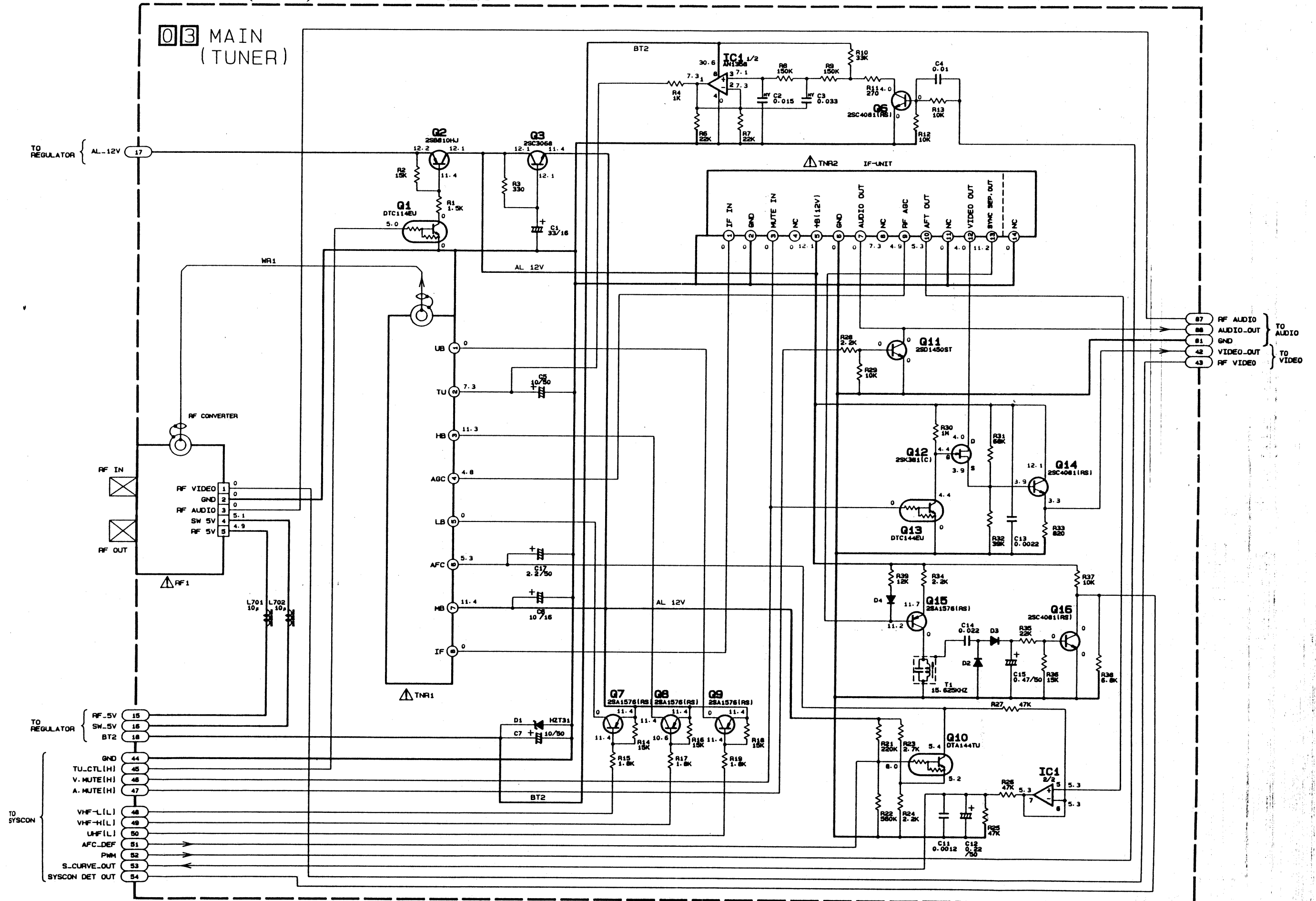
5 VIDEO UNIT



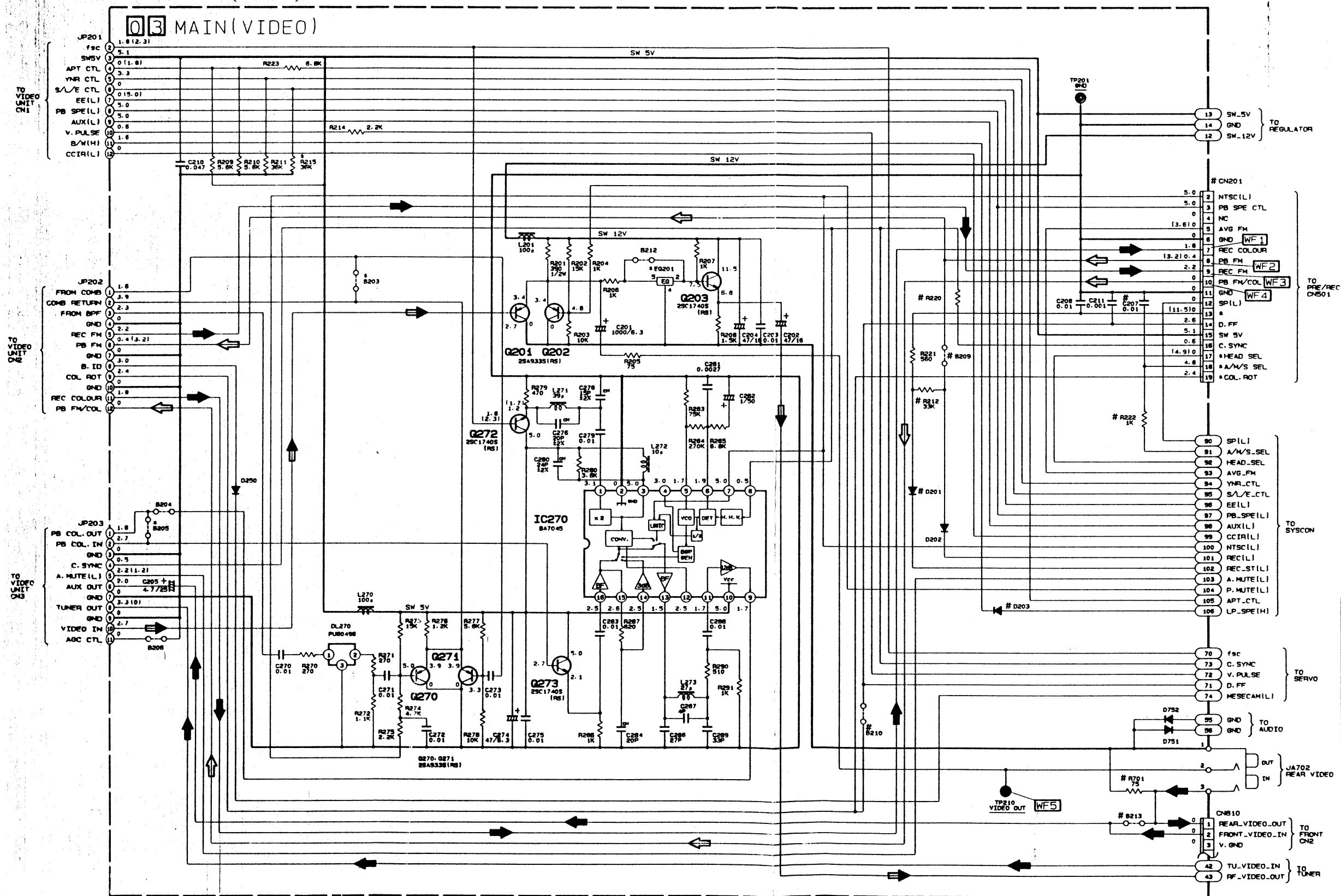
SYSCON/SERVO BLOCK DIAGRAM



MAIN (TUNER) SCHEMATIC DIAGRAM



MAIN (VIDEO) SCHEMATIC DIAGRAM



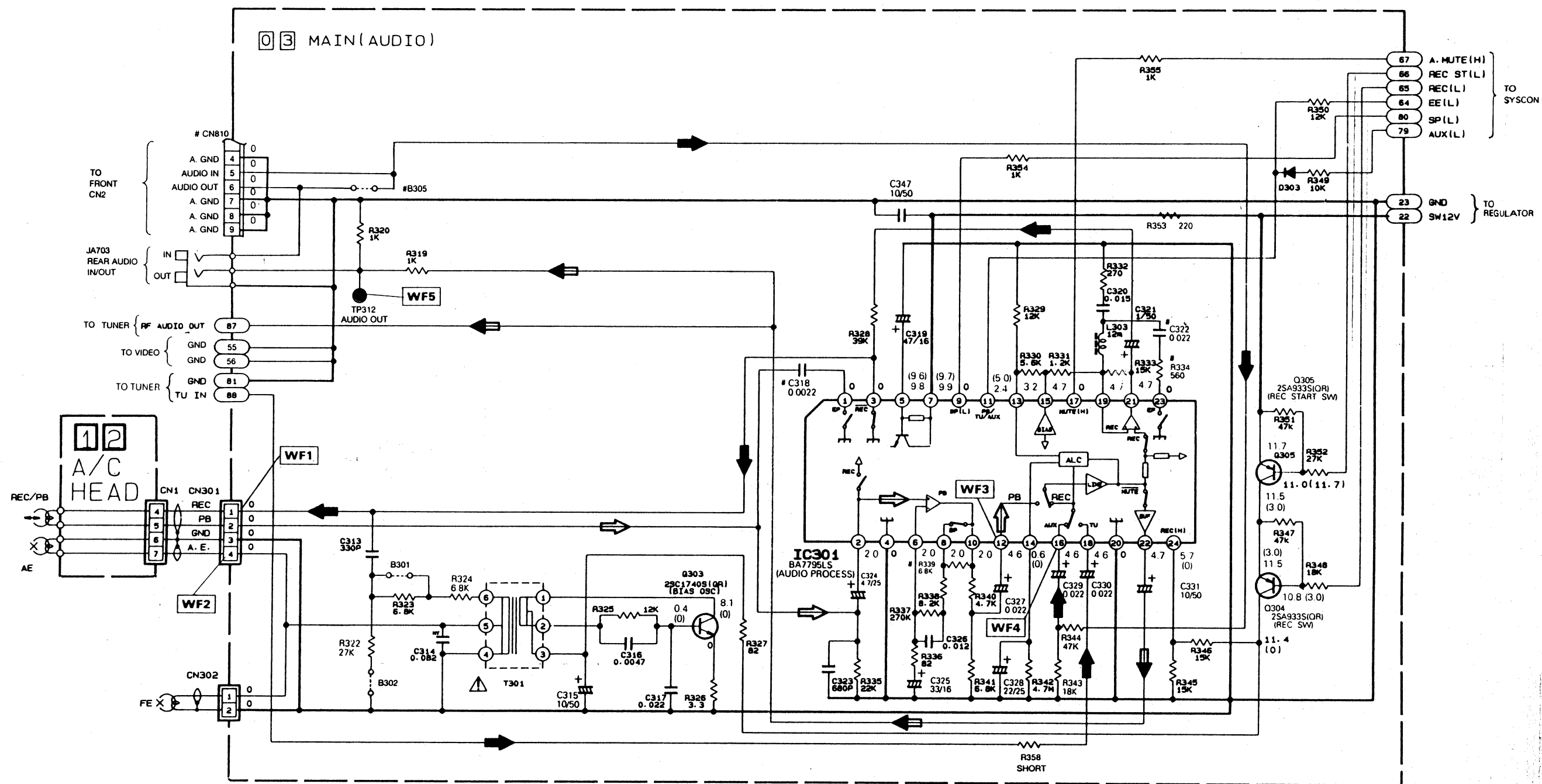
NOTE 1: '*' MARK FLAMEMENTS
ARE NOT MOUNTED.

NOTE2: COMPARISON CHART OF
MODELS & MARKS ' # '

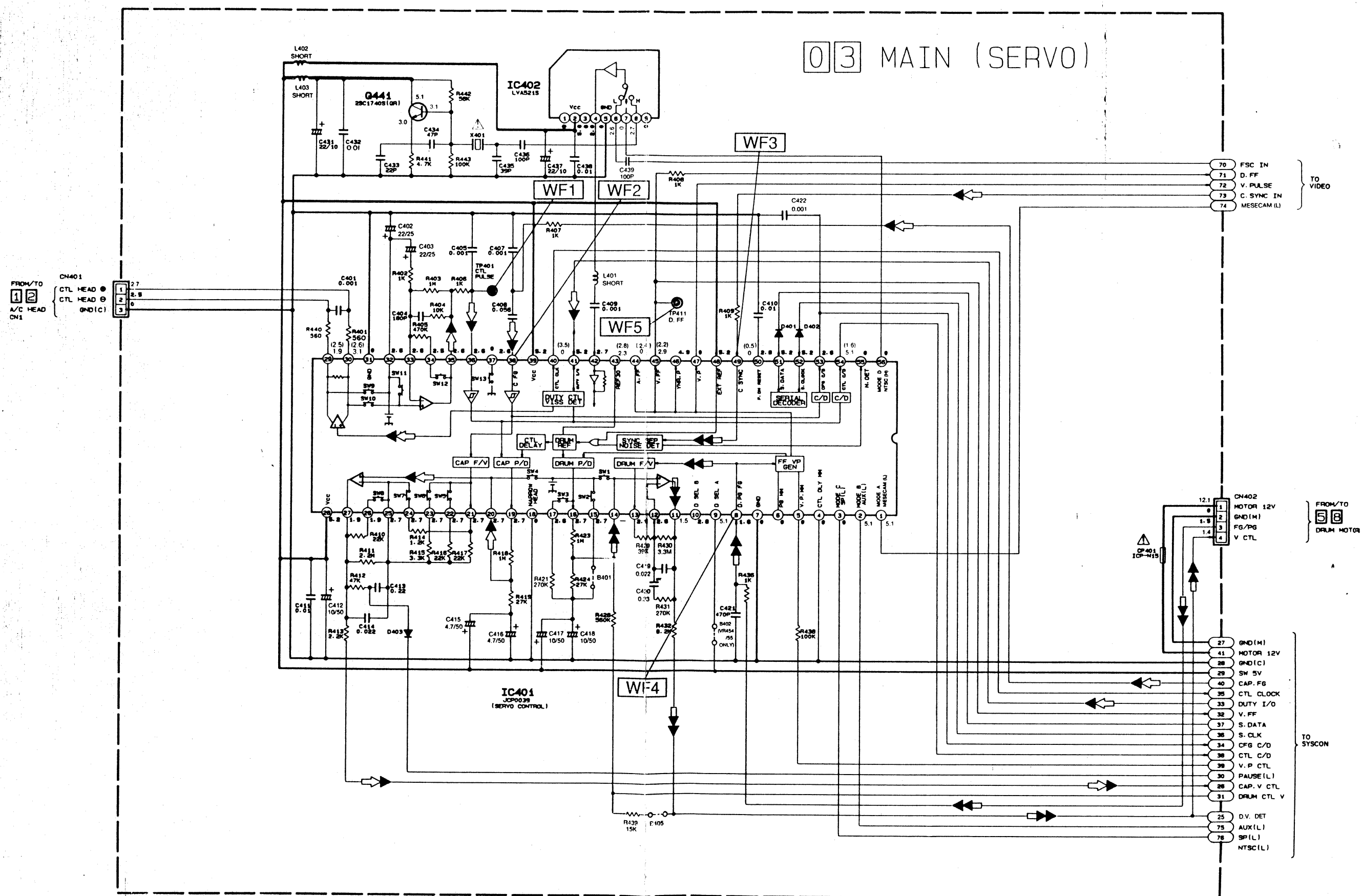
REF. NO	MODELS	
	VR454/55	VR254/55
D201	SHORT	USED
D203	SHORT	OPEN
A212	OPEN	USED
A220	00	100KG
A222	USED	OPEN
G207	USED	OPEN
B209	USED	OPEN
B210	OPEN	USED
B213	OPEN	USED
CN810	USED	OPEN
CN201-13	REC STILL	REC CTL
CN201-17	USED	OPEN
CN201-18	USED	OPEN
CN201-19	USED	OPEN
A701	OPEN	USED

NOTE3: ALL NPN TYPE TRANSISTOR
ARE 2SC1740(RS).
ALL PNP TYPE TRANSISTOR
ARE 2SA933S(RS)

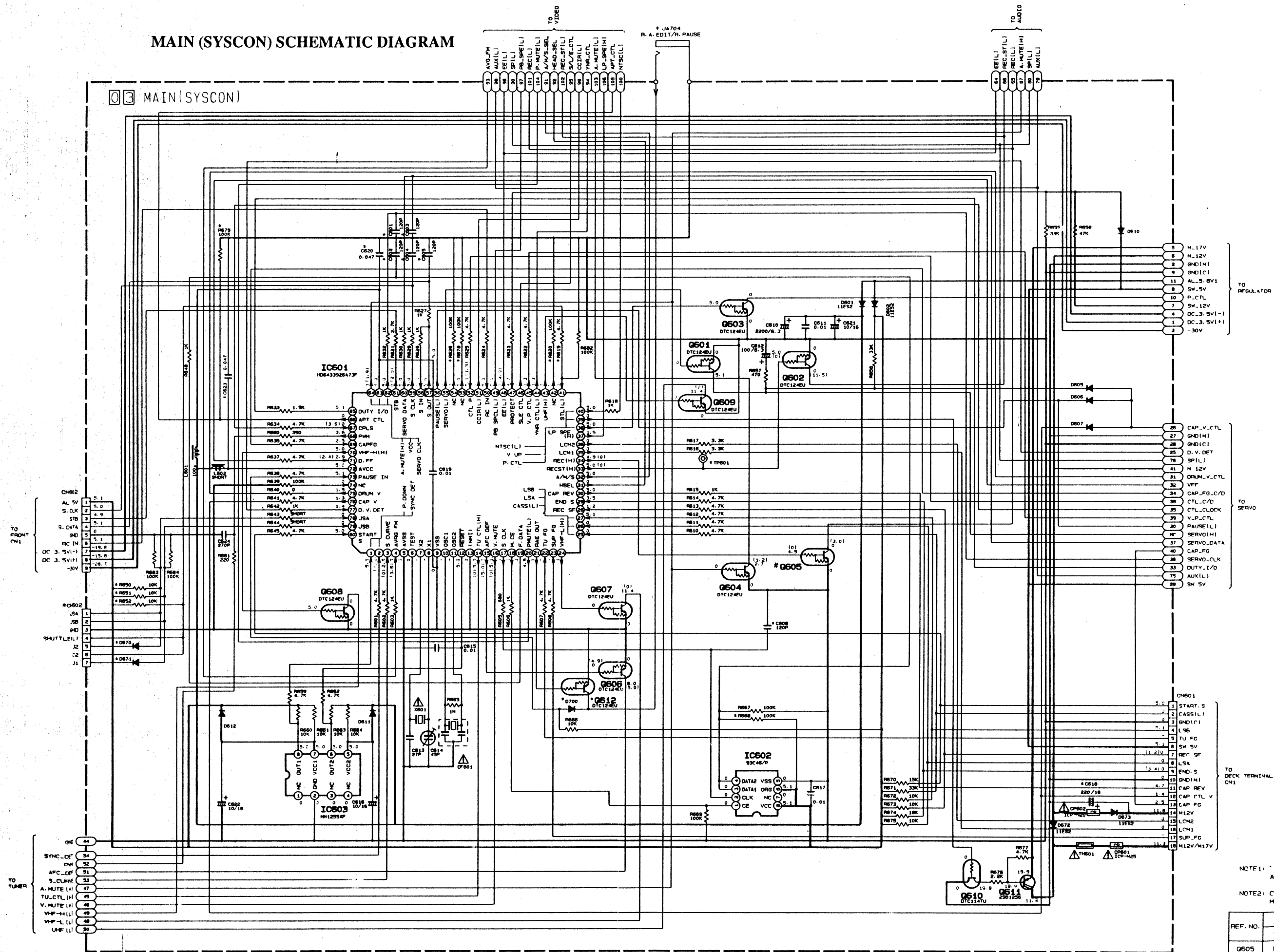
MAIN (AUDIO) SCHEMATIC DIAGRAM



MAIN (SERVO) SCHEMATIC DIAGRAM



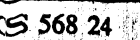
MAIN (SYSCON) SCHEMATIC DIAGRAM



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03 MAIN( REGULATOR)
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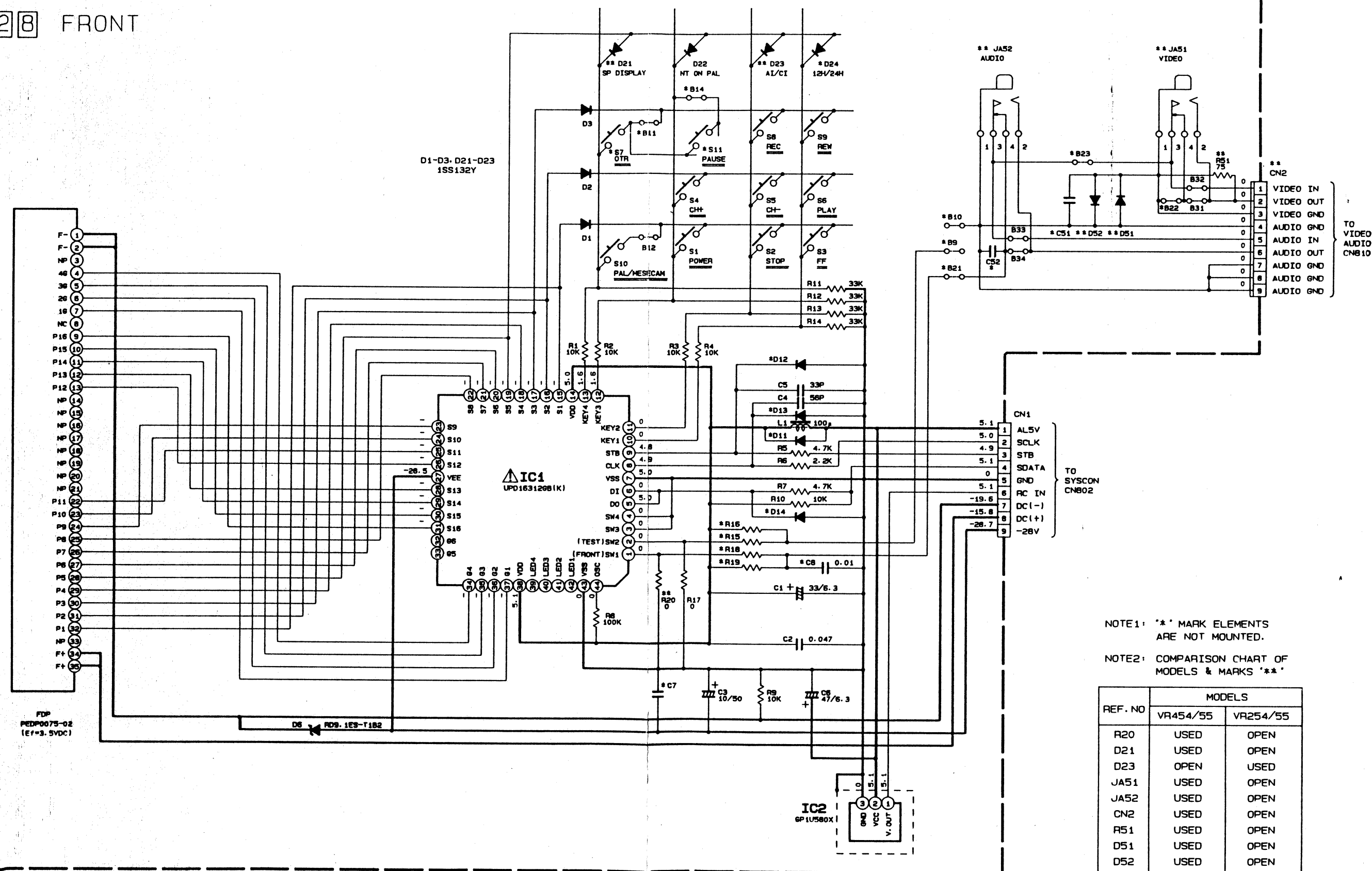


05 VIDEO UNIT



FRONT SCHEMATIC DIAGRAM

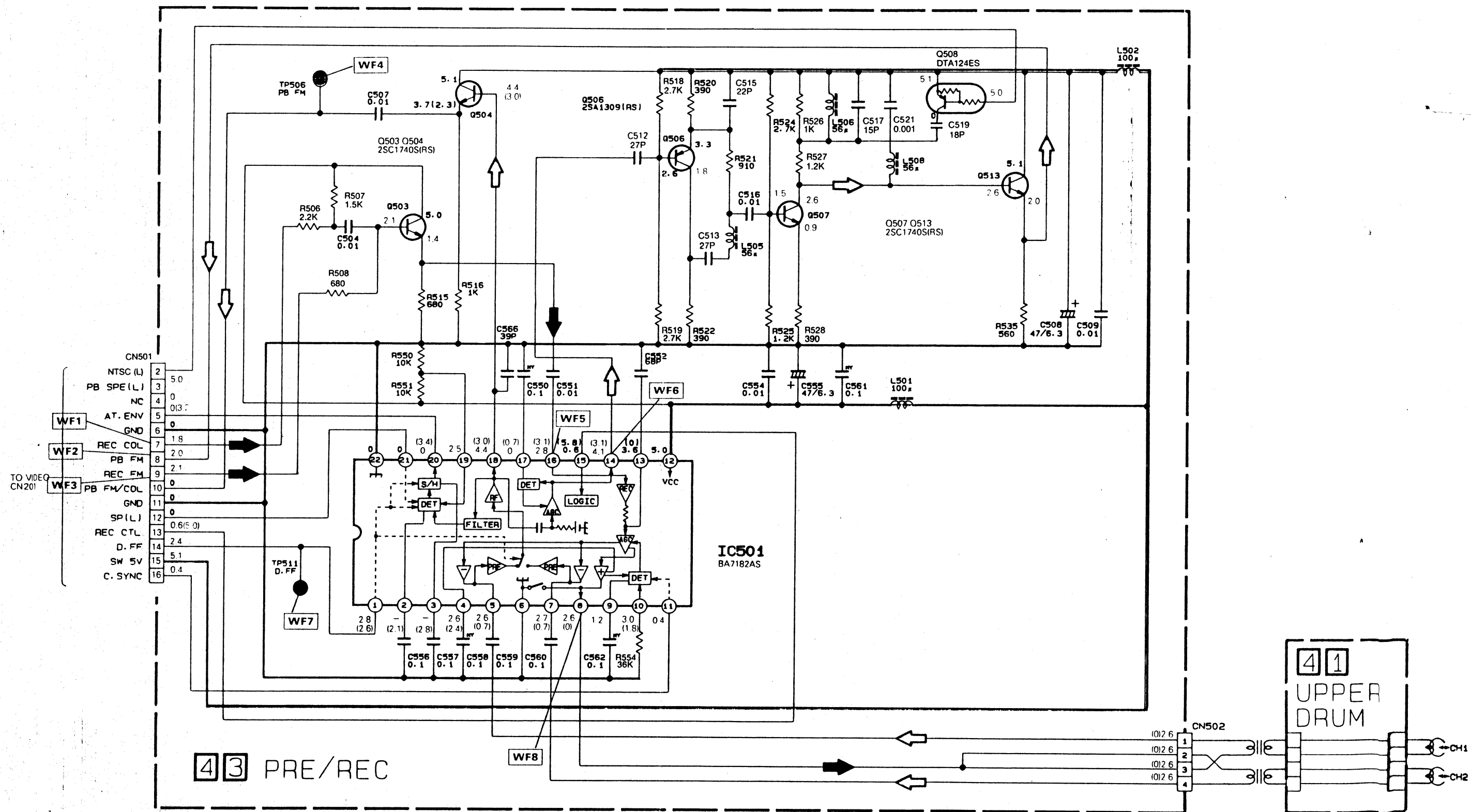
28 FRONT

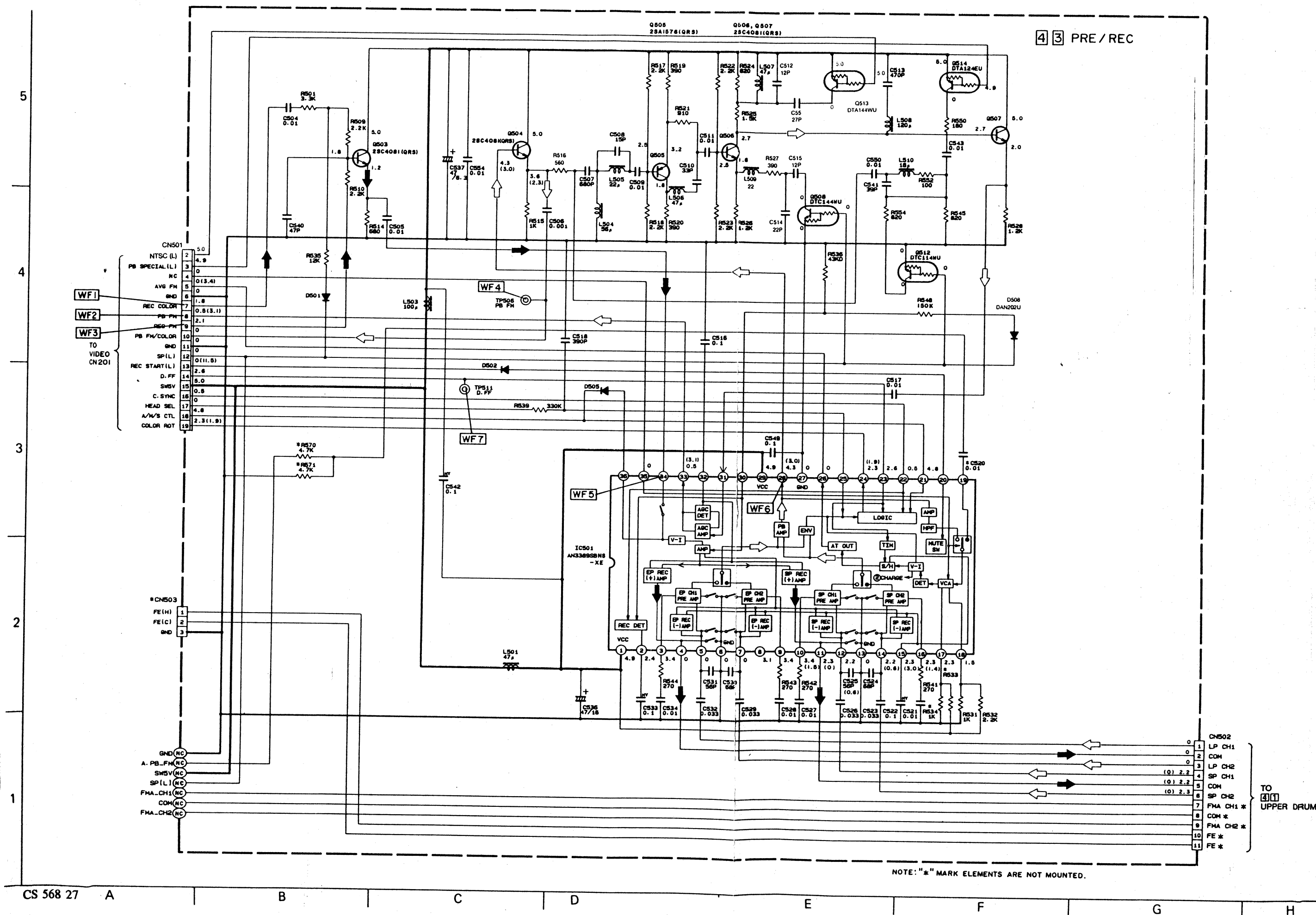


PRE/REC SCHEMATIC DIAGRAM (for VR254/55)

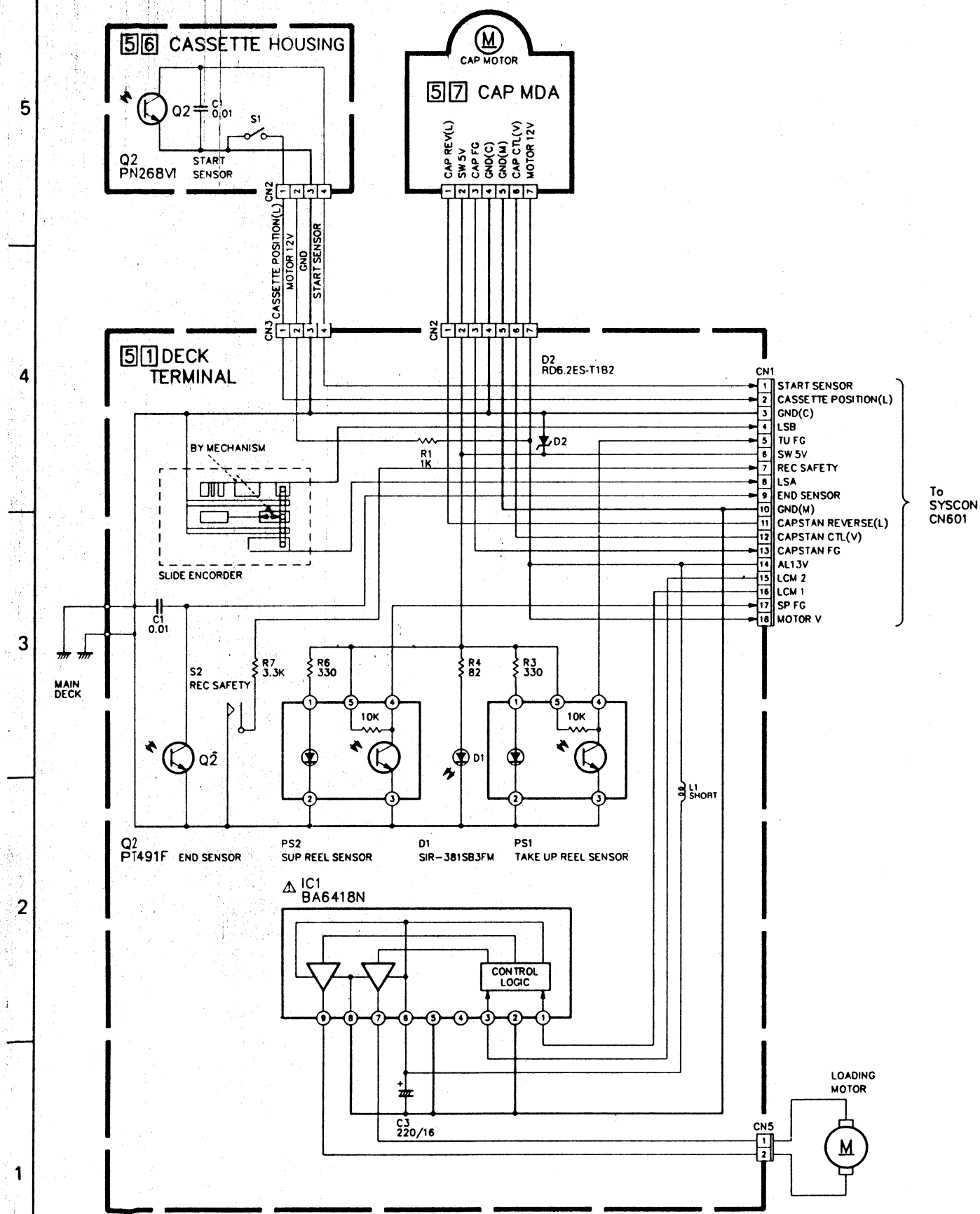
4-13

4-13





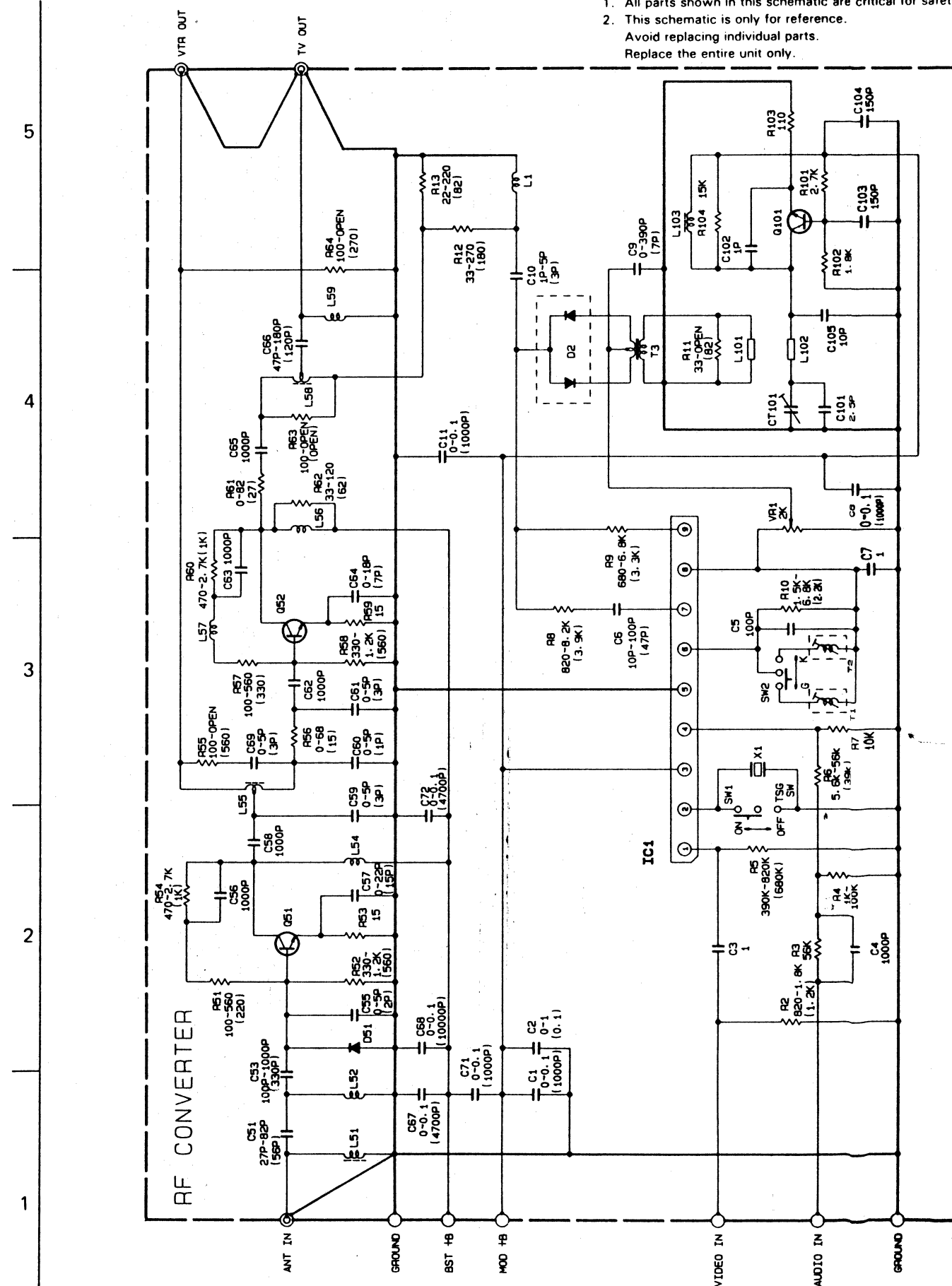
DECK, TERMINAL, CASS. HOUSING AND CAPSTAN MDA SCHEMATIC DIAGRAMS



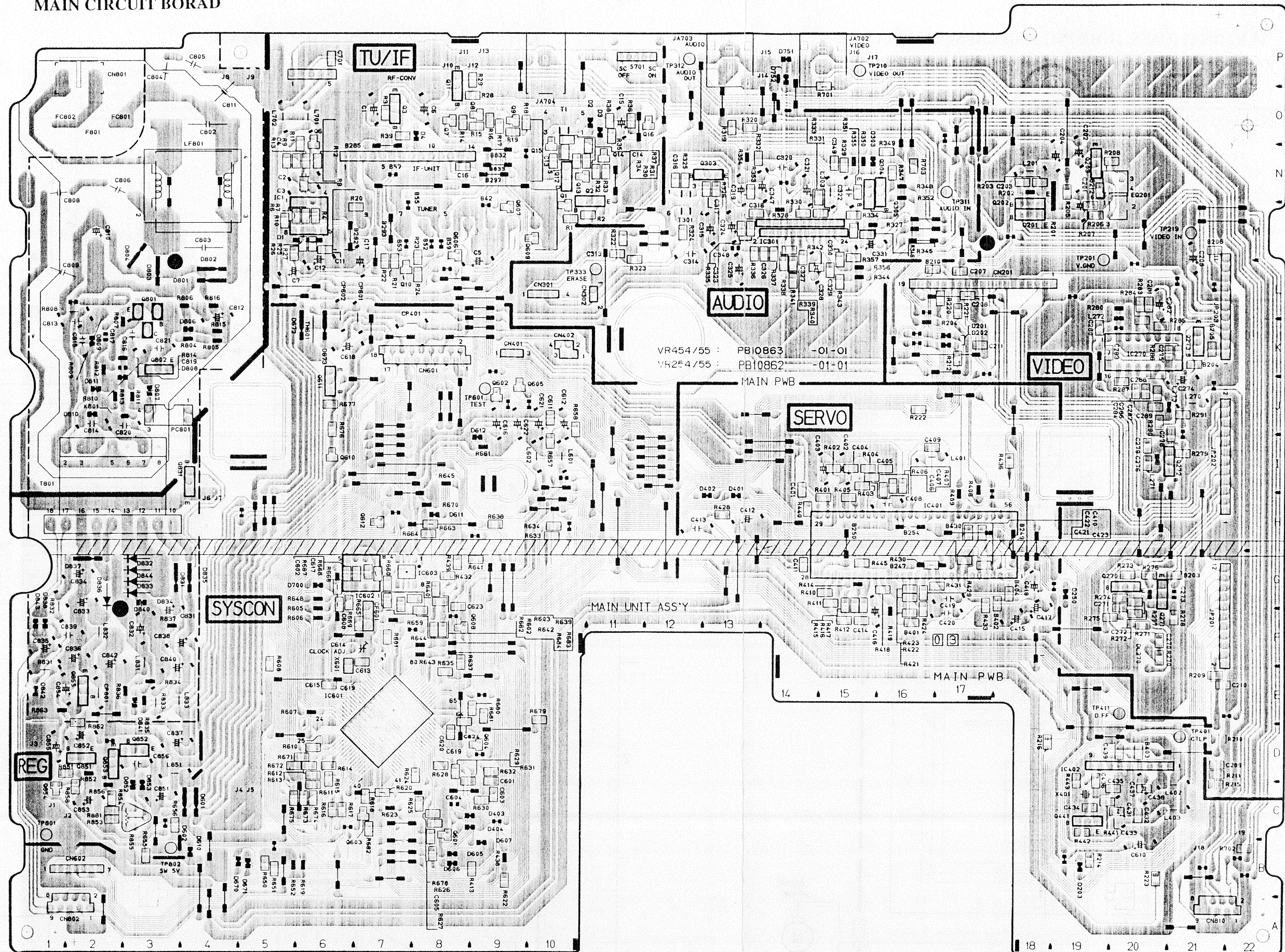
RF CONVERTER SCHEMATIC DIAGRAM

Note:

1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.



MAIN CIRCUIT BOARD



LEADLESS COMPONENT PARTS LOCATION GUIDE <MAIN BOARD>

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
IC		RESISTOR		RESISTOR		RESISTOR		RESISTOR	
IC601	7E	R32	11N	R338	14L	R618	7C	R858	2C
IC603	7G	R33	11N	R339	14M	R620	7C	R861	2C
TRANSISTOR		R34	10N	R340	14L	R622	9B	R862	2D
Q1	10M	R35	110	R341	14L	R624	8D	CAPACITOR	
Q6	60	R36	110	R342	14L	R625	8C	C4	19K
Q7	80	R37	11N	R343	15L	R626	8C	C11	19I
Q8	90	R38	110	R344	15M	R627	8B	C13	21H
Q9	90	R39	70	R345	15M	R628	8D	C14	220
Q10	7L	R203	18N	R347	16N	R629	8D	C16	20J
Q13	10N	R205	19N	R349	16N	R630	9C	C203	18N
Q14	11N	R206	19M	R351	15N	R631	8C	C207	17L
Q15	10N	R207	19M	R353	13N	R632	9D	C208	17L
Q16	120	R208	20N	R357	15M	R633	10H	C209	21D
Q601	8C	R209	21E	R401	15H	R634	10H	C210	21E
Q602	9J	R210	21D	R402	15I	R635	8E	C211	17K
Q603	7C	R211	21D	R403	15H	R637	8F	C270	20F
Q604	9D	R212	17K	R404	15I	R638	9H	C271	20G
Q605	9J	R214	19B	R406	15I	R639	8G	C272	20G
Q606	8M	R215	21C	R407	15I	R640	8G	C275	20K
Q607	9M	R216	18D	R410	15G	R641	9G	C276	20I
Q608	8F	R220	17L	R411	15G	R642	8F	C278	21J
Q609	10M	R221	17L	R412	15F	R650	5B	C279	20I
Q610	6I	R222	16J	R413	9B	R651	5B	C280	19K
Q612	7H	R223	20B	R415	15G	R655	3B	C281	20L
Q854	1C	R270	20F	R416	15G	R656	3C	C283	20K
RESISTOR		R271	20F	R417	15G	R657	10I	C284	20J
R1	10M	R272	20F	R418	16G	R658	10J	C286	20J
R2	11M	R273	20G	R421	16F	R660	7G	C287	20J
R3	70	R274	20G	R422	16G	R662	7G	C288	20K
R4	6M	R275	19F	R423	16G	R663	8H	C289	20J
R6	5M	R276	20G	R424	16F	R664	8H	C313	11M
R7	6M	R278	21F	R428	13H	R665	7F	C316	12N
R8	6N	R279	21I	R429	16G	R666	6G	C317	13N
R9	6N	R283	20L	R430	16G	R667	7G	C318	13M
R10	5M	R284	20K	R431	17G	R668	7G	C323	13M
R11	60	R285	20K	R432	8G	R669	6G	C326	14M
R12	6N	R286	21K	R433	17G	R671	6D	C327	14M
R13	5N	R287	20J	R436	18I	R672	5D	C329	15L
R14	80	R290	20J	R439	8G	R673	6C	C330	15M
R15	90	R291	21J	R440	14H	R674	6C	C349	15N
R16	90	R319	130	R441	19C	R675	5C	C401	14I
R17	90	R320	130	R442	19C	R676	6J	C404	15I
R18	90	R322	11M	R443	19D	R677	6J	C405	16I
R19	90	R323	11M	R445	15G	R678	8C	C406	16I
R20	7M	R324	12M	R601	7F	R679	10E	C407	16I
R21	7L	R325	12N	R602	7G	R680	9E	C409	16I
R22	7L	R326	13N	R603	8G	R681	9E	C410	16I
R23	8M	R329	15N	R608	5E	R682	7C	C411	17H
R24	8L	R330	14M	R610	6D	R683	8F	C411	14G
R25	6M	R331	15M	R611	6C	R684	8F	C411	15F
R26	6M	R332	13N	R612	6D	R701	150	C421	17G
R27	5M	R333	14N	R613	6D	R702	22B	C421	17H
R28	90	R334	15M	R614	6D	R703	16N	C421	17G
R29	9P	R335	13M	R615	6C	R851	2D	C431	20C
R30	10N	R336	13M	R616	6C	R853	2C	C431	20C
R31	10N	R337	14M	R617	6C	R854	2C	C431	19C
								C431	20C

MAIN COMPONENT PARTS LOCATION
GUIDE <MAIN BOARD>

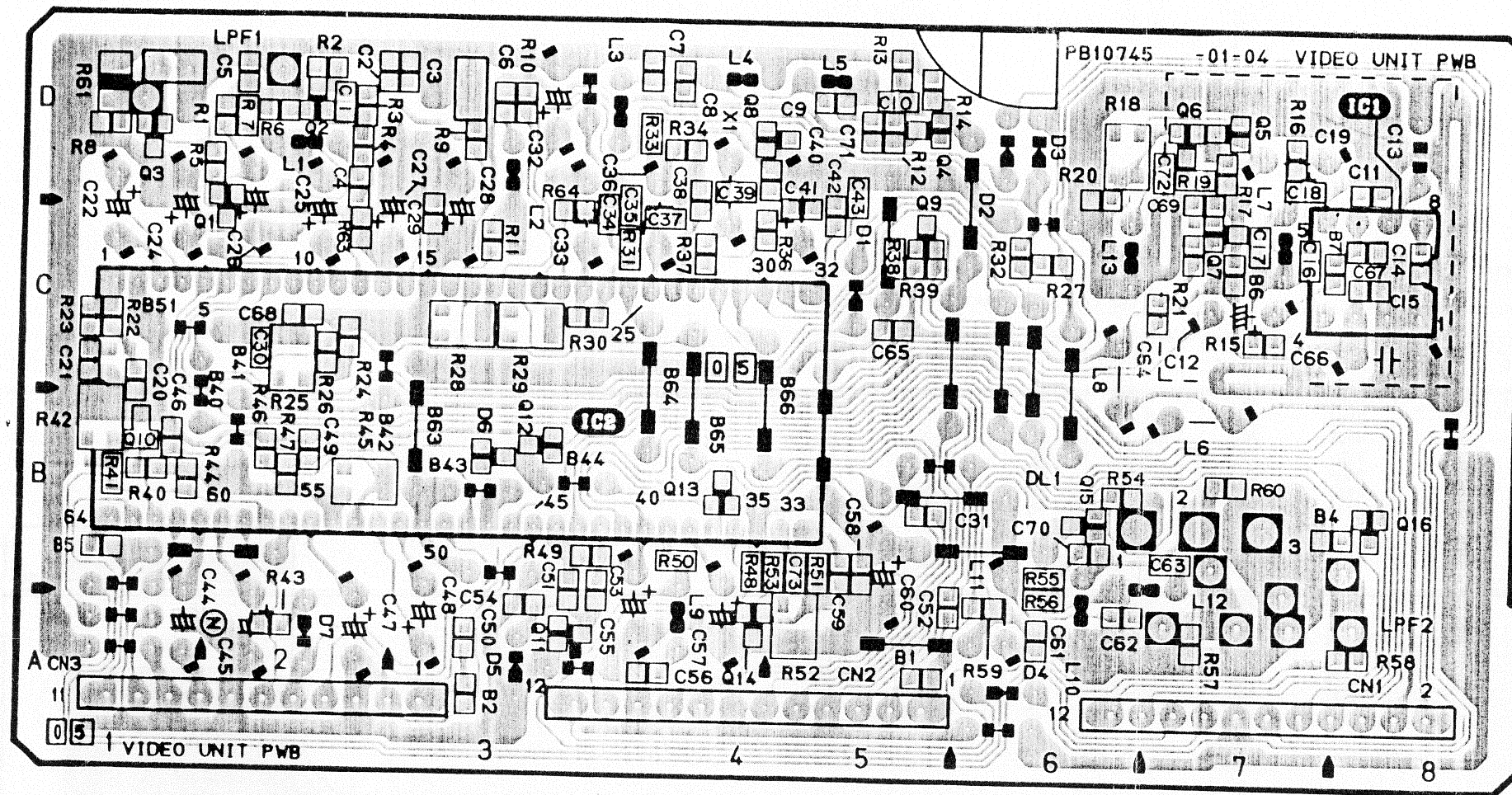
REF. No.	LOCATION
CAPACITOR	
C436	19D
C438	20C
C439	20D
C601	9C
C602	6G
C603	9C
C605	8C
C608	6G
C611	10J
C613	7F
C615	6E
C617	7G
C620	8D
C623	8F
C624	8E
C701	6P

REF. No.	LOCATION
IC	
IC1	6M
IC270	20K
IC301	14M
IC401	16H
IC601	7E
IC602	7G
IC603	7G
TRANSISTOR	
Q1	10M
Q4	11N
Q3	70
Q6	60
Q7	80
Q8	90
Q9	90
Q10	7L
Q11	8P
Q12	10N
Q13	10N
Q14	11N
Q15	10N
Q16	120
Q201	18M
Q202	18M
Q203	19N
Q270	20G
Q271	20G
Q272	21I
Q273	21K
Q303	13N
Q304	16N
Q305	15N
Q441	19C
Q601	8C
Q602	9J
Q603	7C
Q604	9D
Q605	9J
Q606	8M
Q607	9M
Q608	8F
Q609	10M
Q610	6I
Q611	6J
Q801	3L
Q802	3K
Q831	4I
Q851	2D
Q852	3D
Q853	2D
Q854	1C
Q855	2E
DIODE	
D1	5M
D2	110
D3	110

REF. No.	LOCATION
DIODE	
D4	80
D201	17K
D202	17K
D250	19G
D303	15N
D401	13H
D402	13H
D403	9C
D601	4C
D602	4C
D605	8B
D606	8B
D607	9B
D610	4B
D611	8H
D612	9I
D672	6K
D673	6K
D751	14P
D752	14P
D801	4L
D802	4L
D803	3L
D804	3M
D806	4K
D807	3J
D808	2J
D809	2K
D810	2J
D811	2J
D831	3G
D832	3G
D833	3G
D835	4G
D836	2G
D837	2G
D838	1F
D840	3G
D841	3E
D842	1E
D843	1F
D852	3C
D853	3C
CONNECTOR	
CN201	17L
CN301	10L
CN302	11L
CN401	9K
CN402	10K
CN601	8K
CN801	2P
CN802	2A
CN810	21A
ADJUSTMENT	
R855	3C
C614	7F

REF. No.	LOCATION
CP	
CP401	7K
CP601	7L
CP602	6L
CP801	2E
TEST POINT	
TP201	19M
TP210	15P
TP312	12P
TP333	11L
TP401	21D
TP411	20E
TP801	1C
TP802	3B

VIDEO UNIT CIRCUIT BOARDS



MAIN COMPONENT PARTS LOCATION GUIDE

<VIDEO UNIT PWB>

REF. No.	LOCATION
IC	
IC1	8C
IC2	4B

REF. No.	LOCATION
TRANSISTOR	
Q1	2D
Q2	2D
Q3	1D
Q4	5D
Q5	7D
Q6	7D
Q7	7C
Q8	4D
Q9	5C
Q10	1B
Q11	3A
Q12	3B
Q13	4B
Q14	4A
Q15	6B

REF. No.	LOCATION
DIODE	
D1	5C
D2	6D
D3	6D
D4	6A
D5	3A
D7	2A

REF. No.	LOCATION
CONNECTOR	
CN1	8A
CN2	5A
CN3	1A

REF. No.	LOCATION
ADJUSTMENT	
R18	6D
R25	2C
R28	3C
R29	3C
R42	1B
R45	2B
R52	5A

LEADLESS COMPONENT PARTS LOCATION GUIDE

<VIDEO UNIT PWB>

REF. No.	LOCATION
TRANSISTOR	
Q1	2D
Q2	2D
Q3	1D
Q4	5D
Q5	7D
Q6	7D
Q7	7C
Q8	4D
Q9	5C
Q10	1B
Q11	3A
Q12	3B
Q13	4B
Q14	4A
Q15	6B
Q16	8B

REF. No.	LOCATION
DIODE	
D6	3B

REF. No.	LOCATION
RESISTOR	
R1	2D
R2	2D
R3	2D
R4	2D
R5	2D
R6	2D
R7	2D
R8	1D
R9	3D
R10	3D
R11	3C
R12	5D
R13	5D
R14	5D
R15	7C
R16	7D
R17	7D
R18	6D
R19	7D
R20	6D
R21	7C
R22	1C

REF. No.	LOCATION
RESISTOR	
R23	1C
R24	2C
R25	2C
R26	2C
R27	6C
R28	3C
R29	3C
R30	3C
R31	4C
R32	6C
R33	4D
R34	4D
R35	4D
R36	4C
R37	4C
R38	5C
R39	5C
R40	1B
R41	1B
R42	1B
R43	2A
R44	1B
R45	2B
R46	2B
R47	2B
R48	4B
R49	4B
R50	4B
R51	5B
R52	5A
R53	5B
R54	6B
R55	6B
R56	6B
R57	7A
R58	8A
R59	6A
R60	7B
R61	1D
R62	2C
R63	3D
R64	3C

REF. No.	LOCATION
CAPACITOR	
C1	2D
C2	2D
C3	3D

REF. No.	LOCATION
CAPACITOR	
C4	2D
C5	2D
C6	3D
C7	4D
C8	4D
C9	5D
C10	5D
C11	8D
C14	8C
C15	8C
C16	7C
C17	7C
C18	7D
C20	1C
C21	1C
C29	3C
C30	2C
C31	5B
C34	4D
C35	4D
C37	4C
C38	4D
C39	4D
C41	5D
C42	5D
C43	5D
C46	1B
C49	2B
C50	3A
C51	3B
C52	5A
C53	4B
C54	3A
C56	4A
C58	5B
C59	5B
C61	6A
C62	6A
C63	7B
C64	7C
C65	5C
C67	8C
C68	2C
C69	7D
C70	6B
C71	5D
C72	7D
C73	5B

FRONT CIRCUIT BOARD (for VR254/55)

<PRE/REC PWBA> -for VR254/55-

MAIN COMPONENT PARTS LOCATION GUIDE

REF. No.	LOCATION
IC	
IC501	1B
TRANSISTOR	
Q503	2C
Q504	2C
Q506	3B
Q507	3C
Q508	3A
Q513	4B
CONNECTOR	
CN501	3A
CN502	2B
TEST POINT	
TP506	1C
TP511	1C

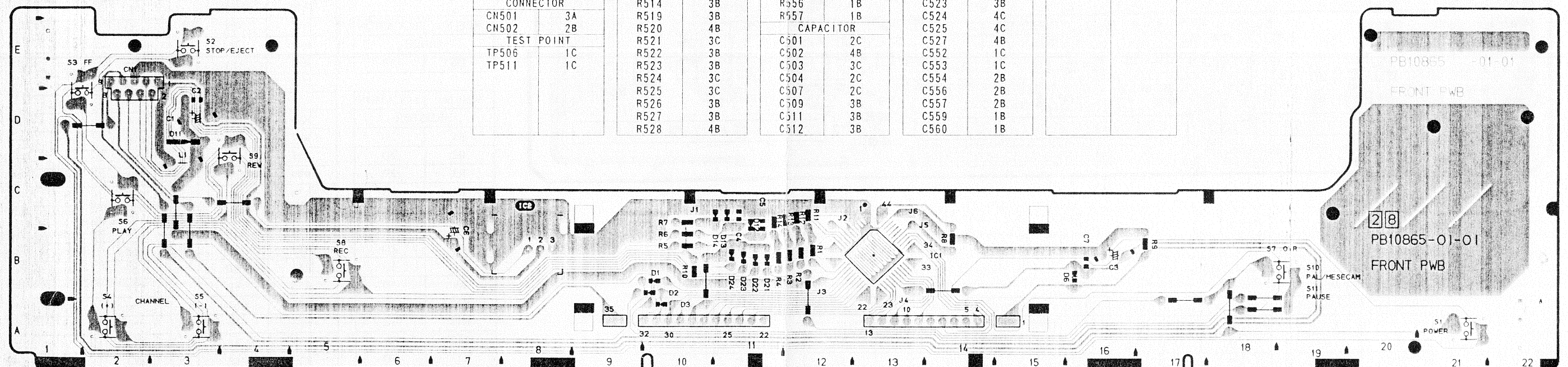
LEADLESS COMPONENT PARTS LOCATION GUIDE

REF.	No.	LOCATION
RESISTOR		
R501		4C
R504		3C
R505		2C
R506		2C
R507		2C
R508		2C
R512		3C
R513		3C
R514		3B
R519		3B
R520		4B
R521		3C
R522		3B
R523		3B
R524		3C
R525		3C
R526		3B
R527		3B
R528		4R

REF.	No.	LOCATION
RESISTOR		
R529		3B
R530		3B
R531		4C
R535		4A
R537		3B
R552		1C
R553		1C
R555		1B
R556		1B
CAPACITOR		
C501		2C
C502		4B
C503		3C
C504		2C
C507		2C
C509		3B
C511		3B
C512		3B

REF. No.	LOCATION
CAPACITOR	
C513	3C
C514	3B
C515	3B
C516	3C
C517	3B
C518	4B
C520	3A
C521	3A
C523	3B
C524	4C
C525	4C
C527	4B
C552	1C
C553	1C
C554	2B
C556	2B
C557	2B
C559	1B
C560	1B

REF. No.	LOCATION
CAPACITOR	
C563	1B
C564	1B



FRONT CIRCUIT BOARD (for VR454/55)

<PRE/REC PWBA> -for VR454/55-

MAIN COMPONENT PARTS LOCATION GUIDE

REF. No.	LOCATION
IC	
IC501	4C
TRANSISTOR	
0503	7C
0504	3E
0505	4E
0506	4E
0507	6E
0508	5E
0512	5E
0513	6D
0514	6C

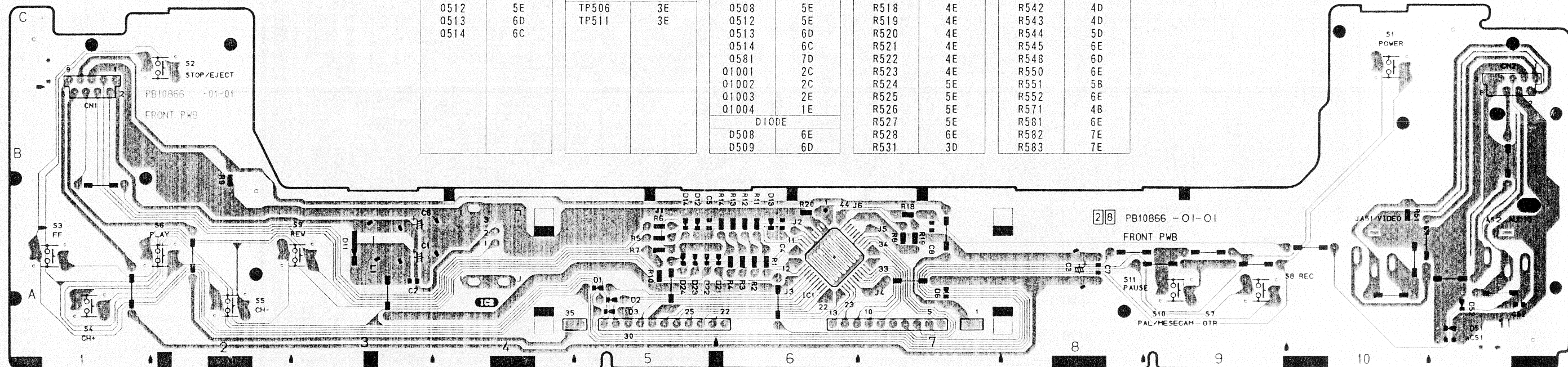
REF. No.	LOCATION
DIODE	
D501	7C
D502	6B
D505	5C
D508	6E
CONNECTOR	
CN501	7A
CN502	3C
TEST POINT	
TP506	3E
TP511	3E

LEADLESS COMPONENT PARTS LOCATION GUIDE

REF. No.	LOCATION
IC	
IC501	4C
IC581	7E
TRANSISTOR	
0503	7C
0504	3E
0505	4E
0506	4E
0507	6E
0508	5E
0512	5E
0513	6D
0514	6C
0581	7D
01001	2C
01002	2C
01003	2E
01004	1E
DIODE	
D508	6E
D509	6D

REF. No.	LOCATION
RESISTOR	
R501	7B
R509	7C
R510	7C
R511	7B
R514	7C
R515	3E
R516	3E
R517	4E
R518	4E
R519	4E
R520	4E
R521	4E
R522	4E
R523	4E
R524	5E
R525	5E
R526	5E
R527	5E
R528	6E
R531	3D

REF. No.	LOCATION
RESISTOR	
R532	3D
R533	3D
R534	3D
R535	7C
R536	5B
R537	6D
R540	7C
R541	4C
R542	4D
R543	4D
R544	5D
R545	6E
R548	6D
R550	6E
R551	5B
R552	6E
R571	4B
R581	6E
R582	7E
R583	7E



REF.	No.	LOCATION
RESISTOR		
	R585	6E
	R586	6E
	R587	7D
	R588	7D
	R589	6D
	R590	7D
	R1001	2D
	R1002	2C
	R1003	2C
	R1004	2E
	R1005	2E
	R1006	2D
	R1007	1E
	R1008	1E
	R1009	1D
	R1010	1D
	R1012	2C
	R1013	1C

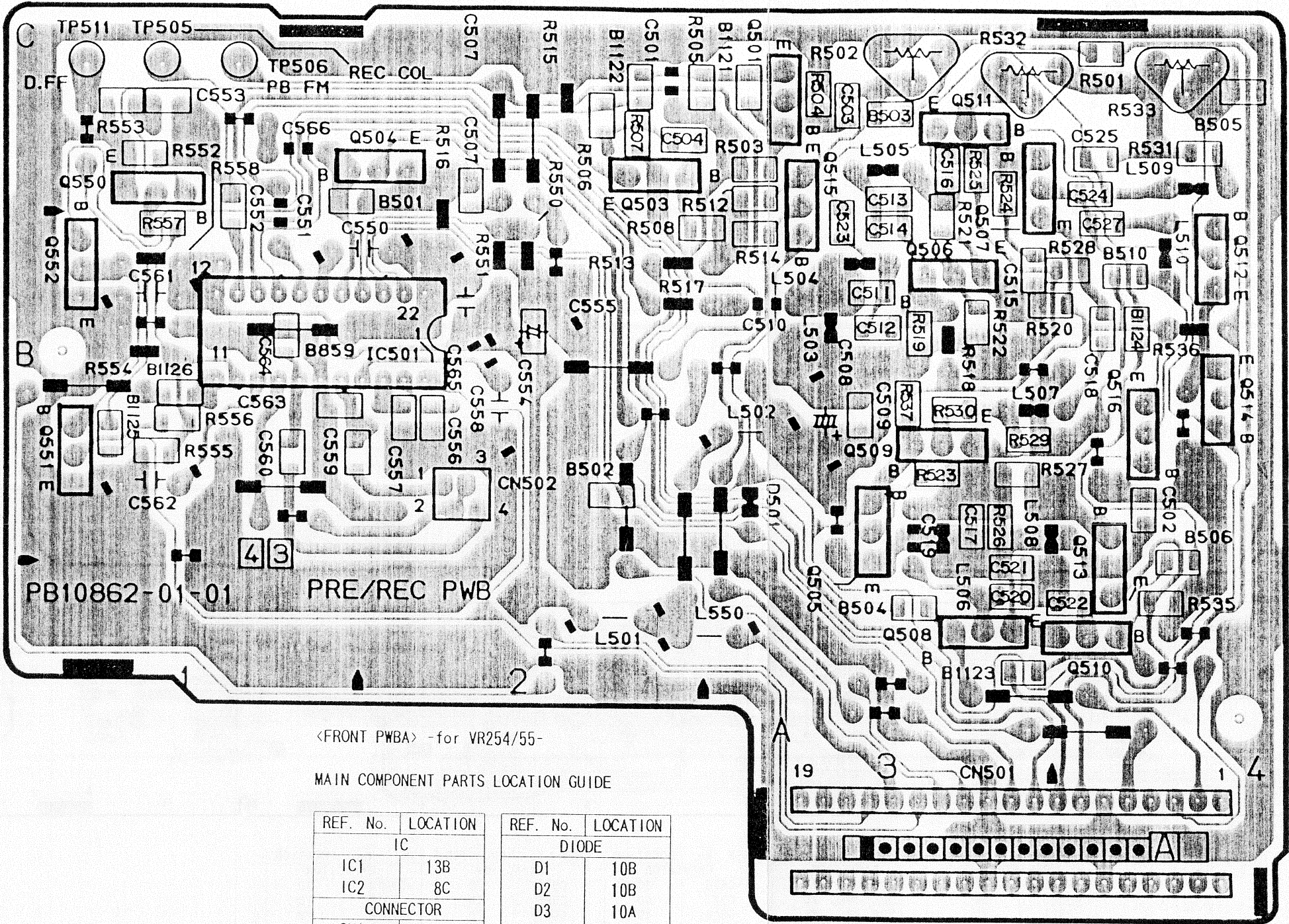
REF. No.	LOCATION
CAPACITOR	
C504	7A
C505	7C
C506	3E
C507	3E
C508	4E
C509	4E
C510	4E
C511	4E
C512	5E
C513	6D
C514	5E
C515	5E
C517	7D
C518	6B
C519	4E
C520	4B
C521	4C
C523	3C
C524	3D
C525	3D

REF. No.	LOCATION
CAPACITOR	
C526	3C
C527	4D
C528	4D
C529	3D
C530	4D
C531	4D
C532	3D
C540	7C
C541	5E
C543	5E
C546	3D
C547	6D
C549	4B
C550	5E
C551	5D
C554	3E
C556	4E
C582	7E
C583	7E
C584	7E

REF. No.	LOCATION
CAPACITOR	
C585	7D
C586	7D
C587	7D
C588	7D
C589	6D
C590	3E
C593	5C
C594	3E
C595	7C
C1001	2D
C1002	2C
C1003	2C
C1004	2C
C1005	2C
C1006	1C
C1007	1D
C1008	1C
C1010	1D
C1012	2D
C1013	2E

REF. No.	LOCATION
CAPACITOR	
C1014	2D
C1015	1D
C1016	2D
C1017	2C
C1018	1C

PRE/REC CIRCUIT BOARD

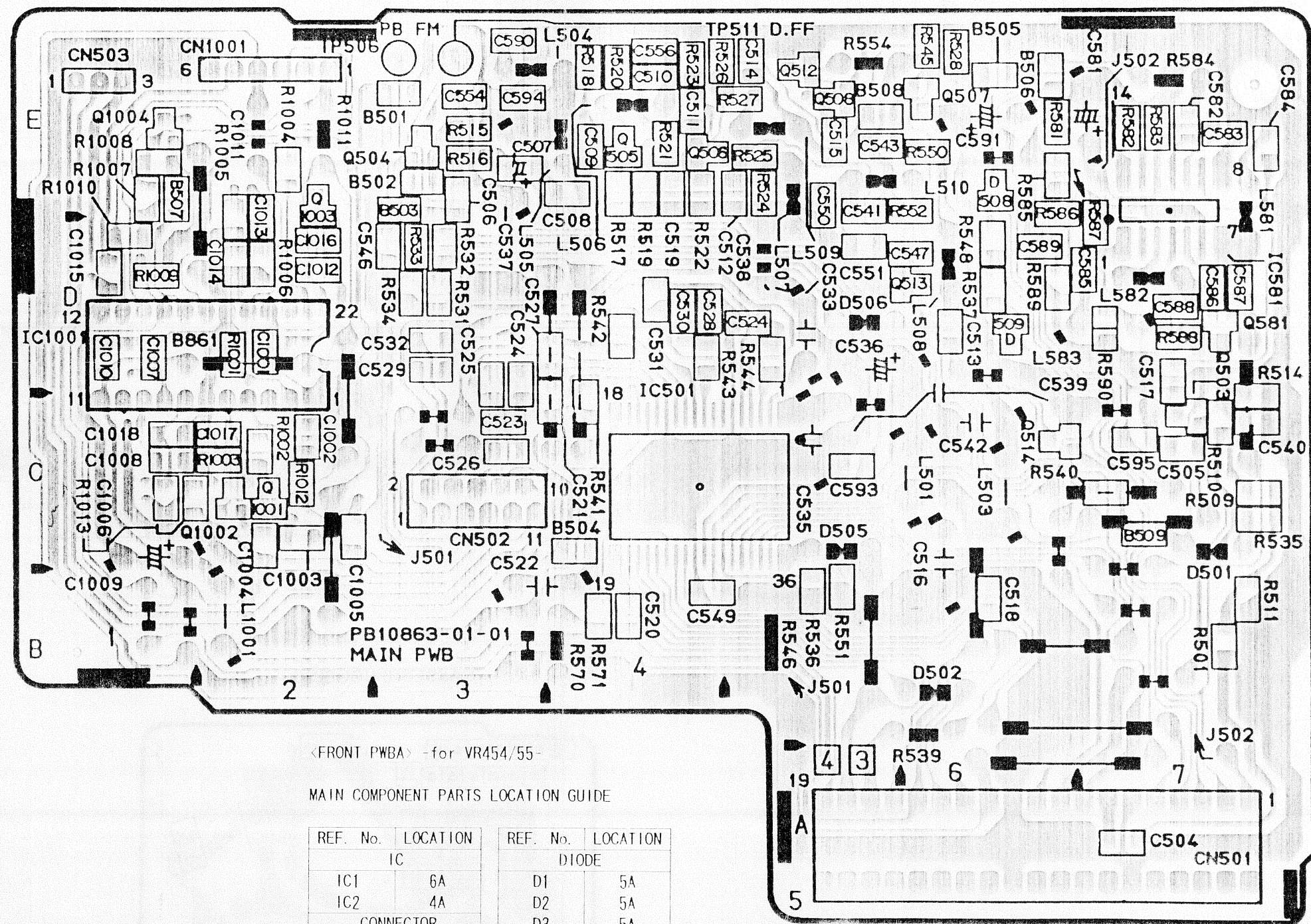


<FRONT PWBA> -for VR254/55-

MAIN COMPONENT PARTS LOCATION GUIDE

REF. No.	LOCATION	REF. No.	LOCATION
IC		DIODE	
IC1	13B	D1	10B
IC2	8C	D2	10B
CONNECTOR		D3	10A
CN1	2E	D6	16B
		D22	11B
		D23	11B

PRE/REC CIRCUIT BOARD (for VR454/55)



<FRONT PWBA> -for VR454/55-

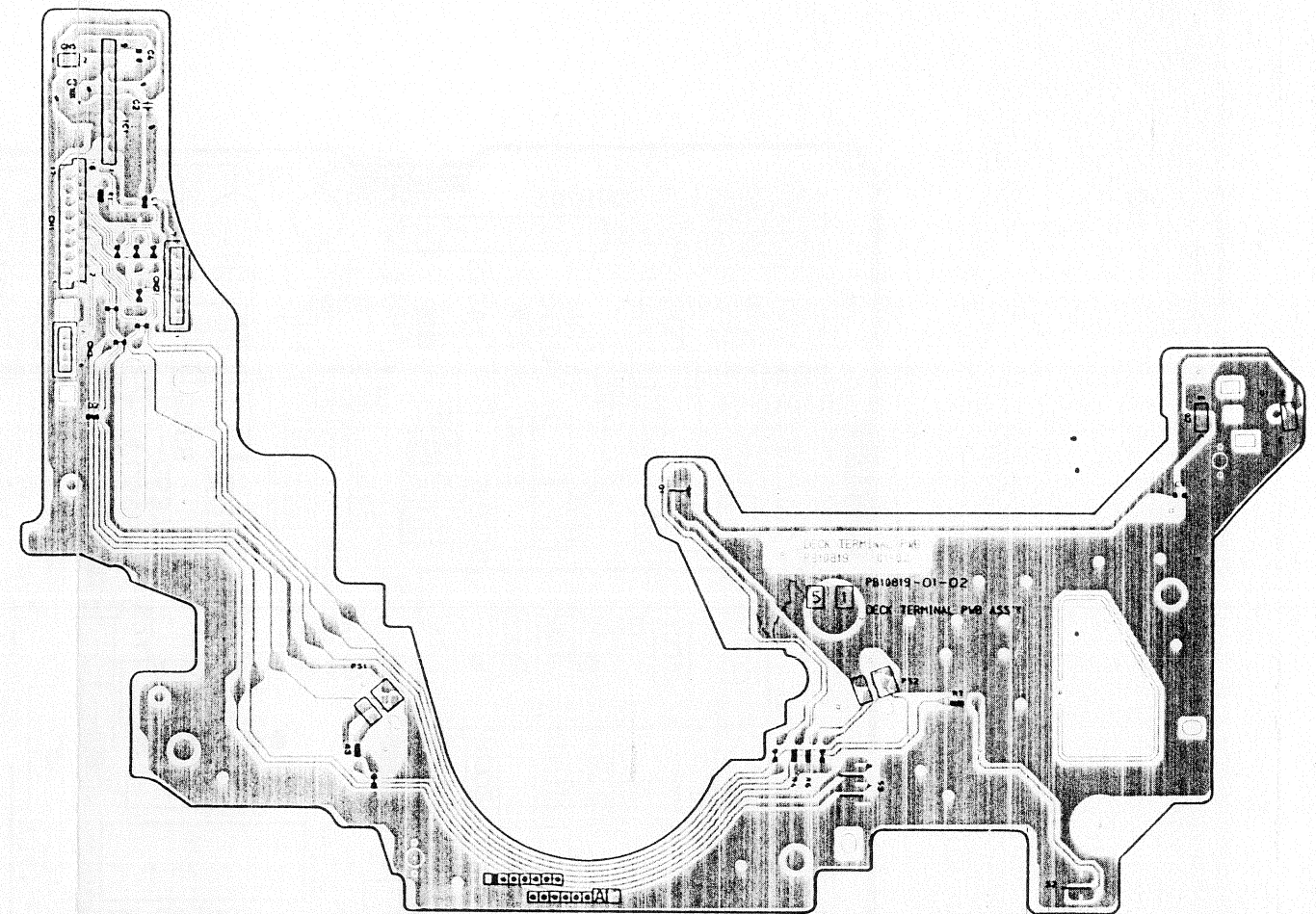
MAIN COMPONENT PARTS LOCATION GUIDE

REF. No.	LOCATION	REF. No.	LOCATION
IC		DIODE	
IC1	6A	D1	5A
IC2	4A	D2	5A
CONNECTOR		D3	5A
CN1	1B	D6	7A
CN2	11C	D21	5A
		D22	5A
		D51	11A
		D52	11A

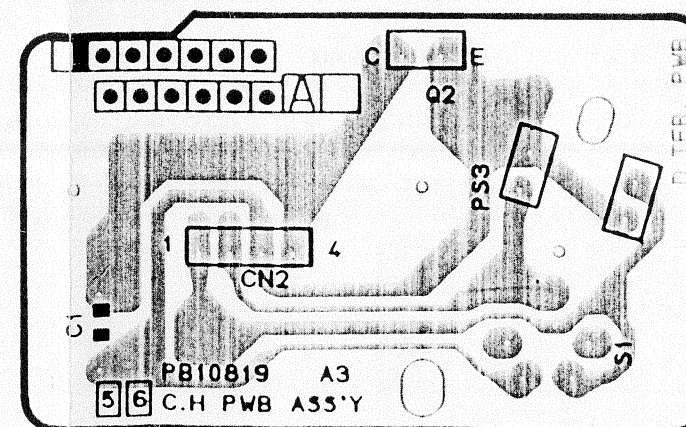
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DECK. TERMINAL, CASS. HOUSING AND A/C HEAD
CIRCUIT BOARDS

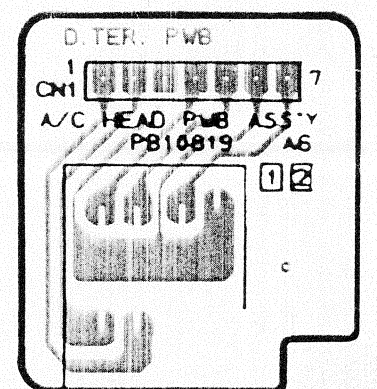
— DECK TERMINAL —



— CASSETTE HOUSING —

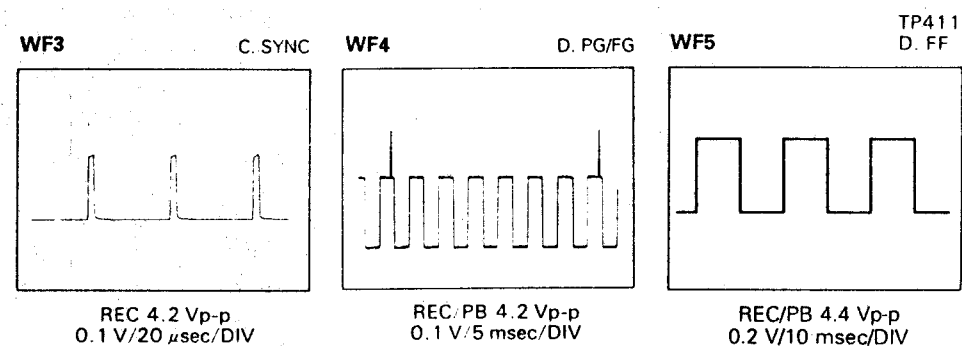
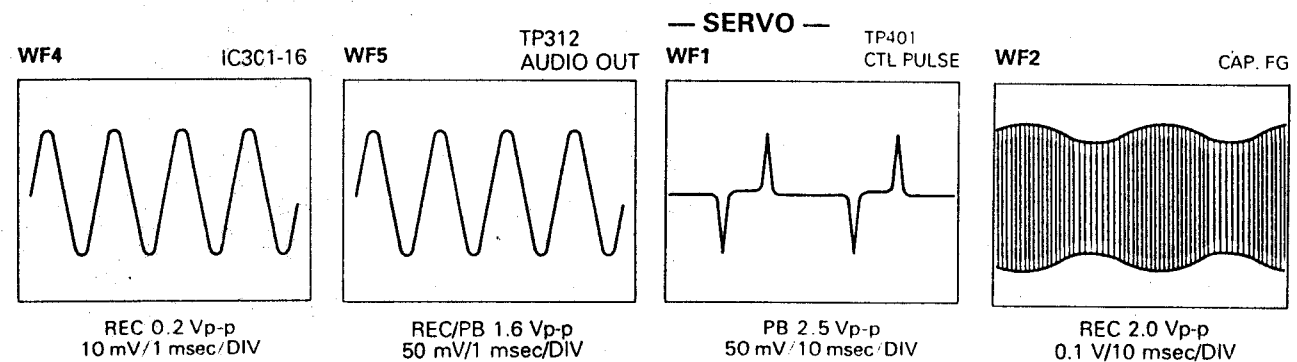
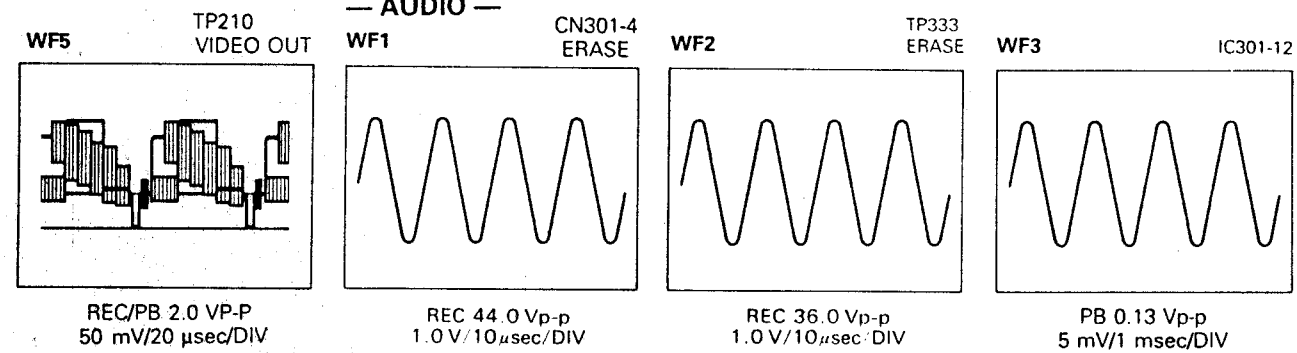
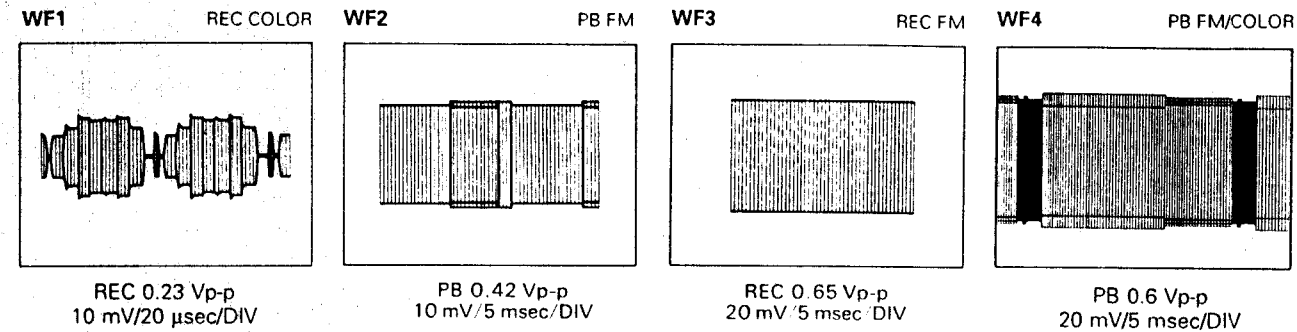


— A/C HEAD —

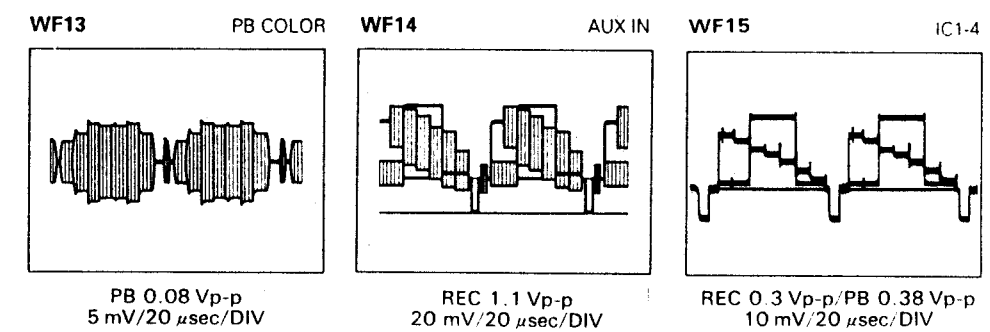
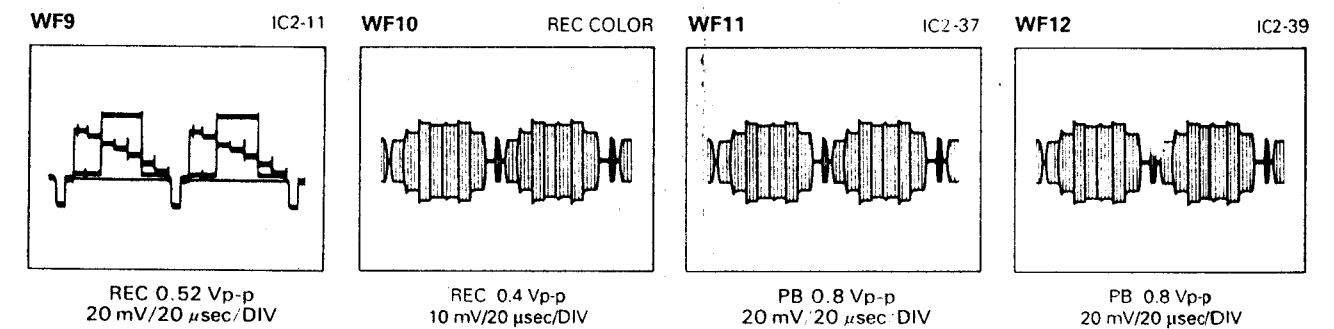
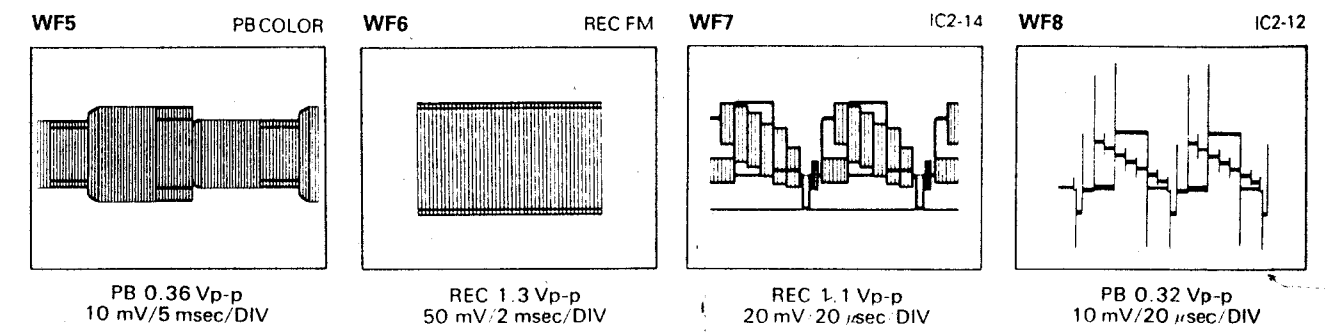
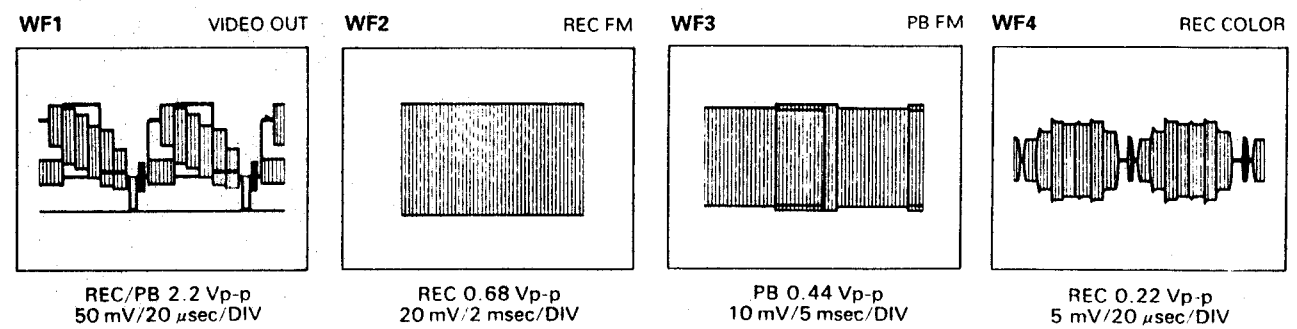


WAVEFORMS

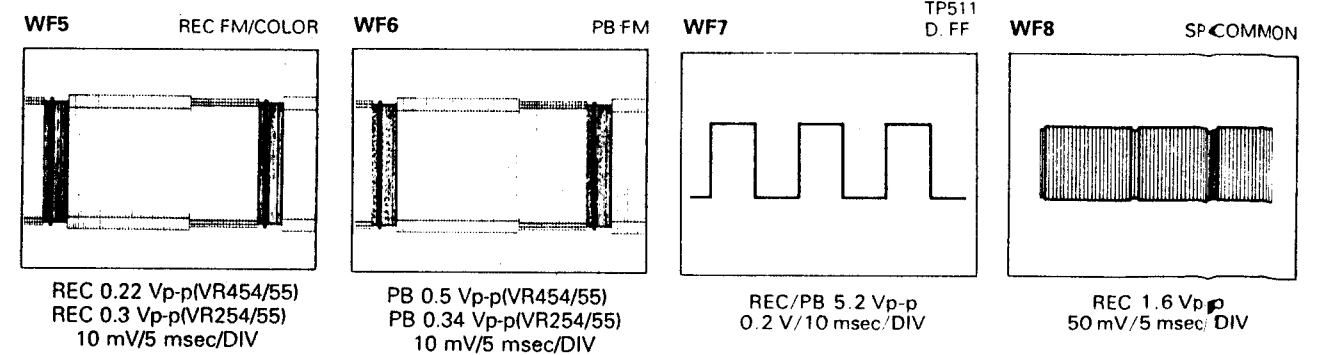
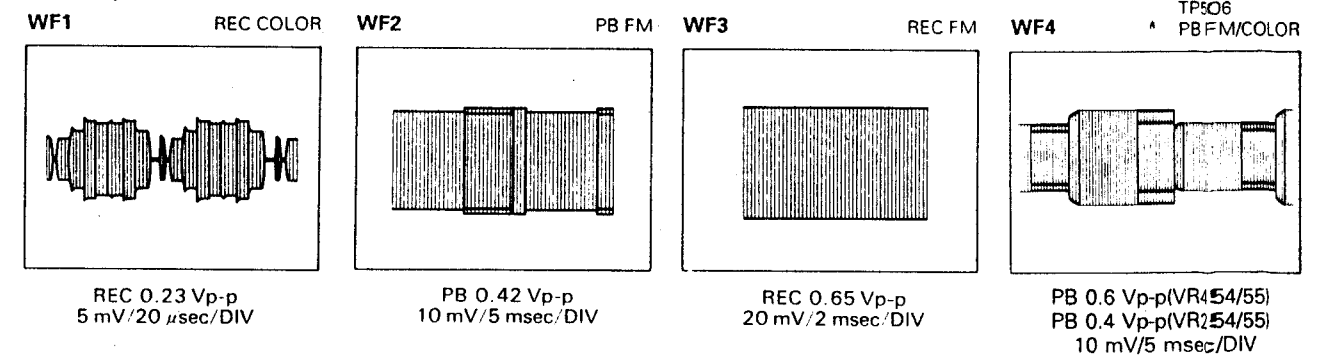
— VIDEO —



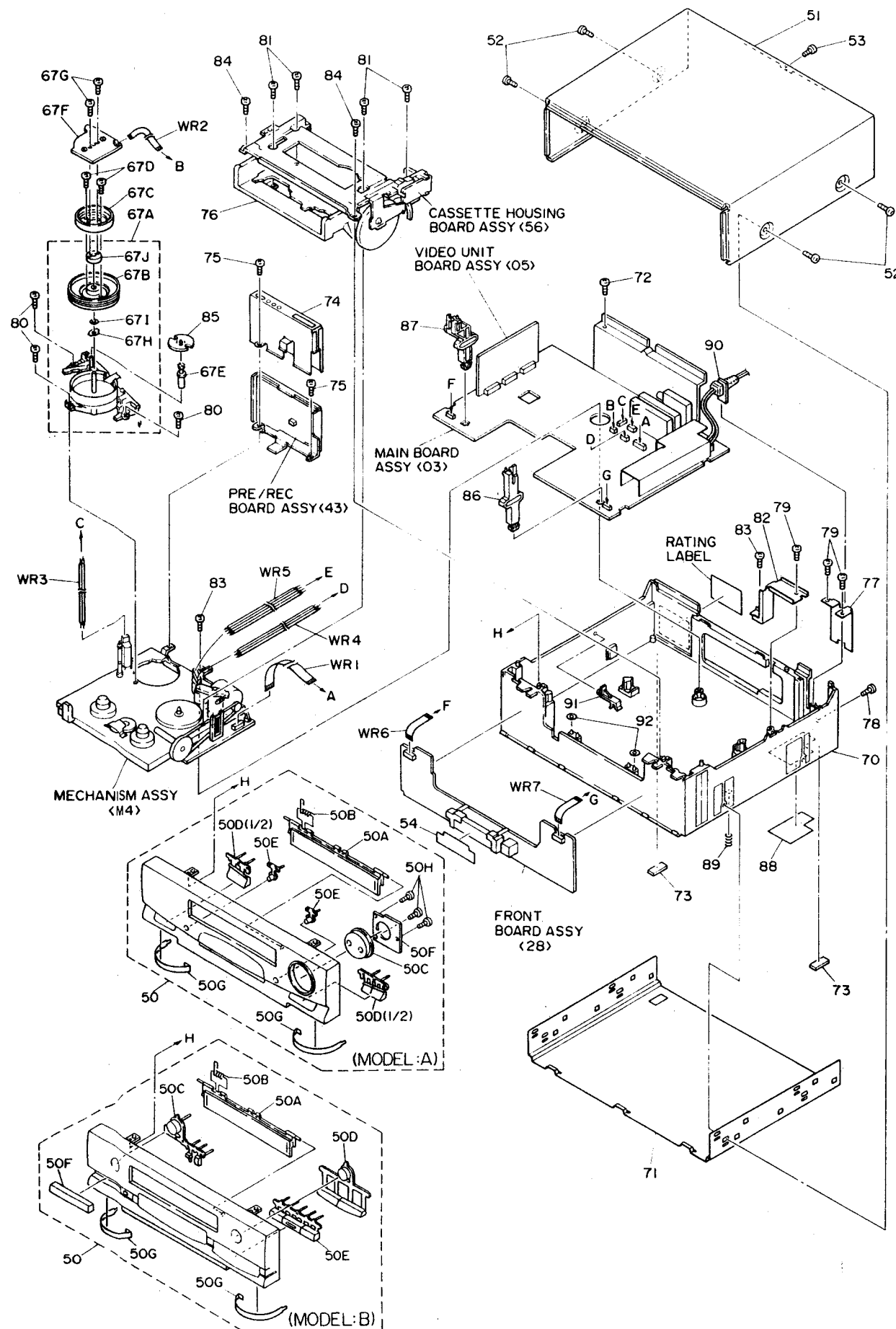
— VIDEO UNIT —



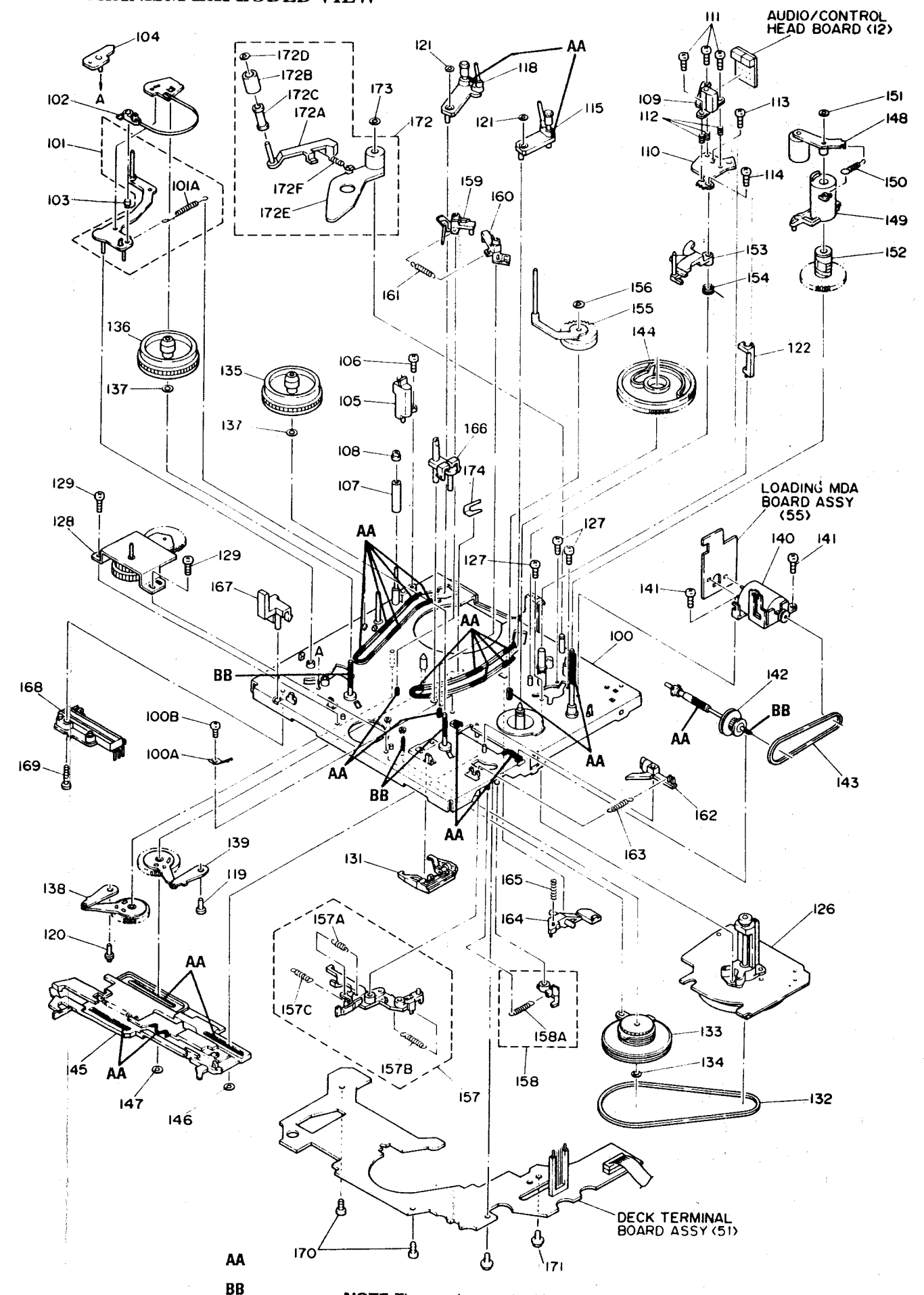
— PRE/REC —



EXPLODED VIEW



MACHANISM EXPLODED VIEW



NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

PARTLIST FOR VR254/55 & VR454/55

NOTE : \$ denotes safety component

MISCELLANEOUS

-VR254/55-

10	4822 736 53987	INSTRUCTIONS
11	4822 736 53988	INSTRUCTIONS
13	4822 218 30773	REMOTE CONTROLLER

-VR454/55-

10	4822 736 53989	INSTRUCTIONS
11	4822 736 53991	INSTRUCTIONS
13	4822 218 30774	REMOTE CONTROLLER

CABINET AND CHASSIS ASSEMBLY

50A	4822 443 64182	CASSETTE HOUSING DOOR (VR254/55)
50A	4822 443 64181	CASSETTE HOUSING DOOR (VR454/55)
50B	4822 492 42629	TORSION SPRING
50C	4822 410 63254	BUTTON (1) (VR254/55)
50C	4822 410 63257	BUTTON (1) (VR454/55)
50D	4822 410 63255	BUTTON (2) (VR254/55)
50D	4822 410 63258	BUTTON (2) (VR454/55)
50E	4822 410 63256	BUTTON (3).X2 (VR254/55)
50E	4822 410 63259	BUTTON (3) (VR454/55)
50F	4822 459 61225	BASE(BUTTON) (VR254/55)
50F	4822 443 64183	COVER(FRONT 1) (VR454/55)
50H	4822 502 30466	SCREW.X3 (VR254/55)
51	4822 443 41447	TOP COVER (VR254/55)
51	4822 443 41448	TOP COVER (VR454/55)
52	4822 502 13813	SPECIAL SCREW.X4
53	4822 502 30729	SCREW
54	4822 480 40243	FILTER(FDP)
67A	4822 691 20956	DRUM SUB ASSEMBLY (VR254/55)
67A	4822 691 20955	DRUM SUB ASSEMBLY (VR454/55)
67B	4822 691 20957	UPPER DRUM ASSEMBLY (VR254/55)
67B	4822 691 20958	UPPER DRUM ASSEMBLY (VR454/55)
67C	4822 362 20241	ROTOR ASSEMBLY
67D	4822 502 12111	SCREW.X2
67E	4822 528 90873	ROLLER ASSEMBLY
67F	4822 362 10273	\$ STATOR ASSEMBLY
67G	4822 502 13277	SCREW.X2
67H	4822 479 30165	BRUSH ASSEMBLY
67I	4822 532 12258	WASHER
67J	4822 532 12281	COLLAR ASSEMBLY
71	4822 443 41449	BOTTOM COVER
72	4822 502 13817	SCREW
73	4822 462 42041	FOOT.X2
74	4822 462 50489	SHIELD CASE.PRE
75	4822 503 21007	SCREW.X2 PRE
76	4822 691 20942	CASSETTE HOUSING ASSEMBLY
78	4822 502 13815	SPECIAL SCREW.BRACKET
79	4822 502 13817	SCREW.X3 BRACKET
80	4822 502 21255	SCREW.X3 DRUM
81	4822 502 13818	SCREW.X4 CASSETTE HOUSING
82	4822 403 71174	BRACKET(MECHA)

83	4822 502 13814	SPECIAL SCREW.X2 MECHA
84	4822 502 13817	SCREW.X2 CASSETTE HOUSING
85	4822 528 90827	INERTIA PLATE
89	4822 492 52406	COMPRESSION SPRING
90	4822 321 11073	POWER CORD
92	4822 532 12285	WASHER.X2

WR1	4822 736 60001	FFC WIRE.D/T
WR2	4822 321 62487	FFC.DRUM
WR3	4822 321 62607	WIRE.FE
WR4	4822 321 62483	WIRE.CTL
WR5	4822 321 62095	WIRE.AUDIO
WR6	4822 321 62485	FFC WIRE.M.CN810 B
WR7	4822 321 62485	FFC WIRE.M.CN802

MECHANISM ASSEMBLY

100A	4822 492 70943	EARTH PLATE
100B	4822 502 13828	SCREW
101	4822 403 70963	TENSION ARM ASSEMBLY
101A	4822 492 33295	TENSION SPRING
102	4822 401 11421	TENSION BAND ASSEMBLY
103	4822 535 93247	ADJUST PIN
104	4822 403 70455	TENSION BAND BRACKET-3
105	4822 249 40307	FULL ERASE HEAD
106	4822 502 13816	SCREW.FE HEAD
107	4822 528 90823	ROLLER
108	4822 462 71778	GUIDE POLE CAP
109	4822 249 10444	AUDIO CONTROL HEAD
110	4822 464 50858	HEAD BASE
111	4822 502 13812	SPECIAL SCREW.X3
112	4822 492 52267	COMPRESSION SPRING.X3
113	4822 502 30531	SCREW
114	4822 502 13277	SCREW
115	4822 403 71176	POLE BASE ASSY(TAKE UP)
118	4822 403 71177	POLE BASE ASSY(SUPPLY)
119	4822 462 71867	STOPPER(T)
120	4822 462 71866	STOPPER(S)
121	4822 532 52533	SLIT WASHER.X2
122	4822 528 90868	TAPE GUARD
126	4822 361 60503	\$ CAPSTAN MOTOR
127	4822 502 12949	SCREW.X3
128	4822 522 33502	IDLER GEAR UNIT
129	4822 502 30471	SCREW.X2
131	4822 403 70976	CHANGE LEVER ASSEMBLY
132	4822 358 31143	TIMER BELT
133	4822 528 30413	CLUTCH UNIT
134	4822 532 12105	SLIT WASHER
135	4822 528 10887	REEL DISK ASSY(TAKE UP)
136	4822 528 81452	REEL DISK (SUPPLY)
137	4822 532 52355	SPACER.X2
138	4822 403 70964	LOADING ARM ASSY (SUPPLY)
139	4822 403 70965	LOADING ARM ASSY(TAKE UP)
140	4822 361 21576	LOADING MOTOR ASSEMBLY
141	4822 502 30471	SCREW.X2
142	4822 528 30409	WORM CLUTCH ASSEMBLY
143	4822 358 31142	BELT
144	4822 522 33108	CONTROL CAM
145	4822 466 83023	PLATE ASSY
146	4822 532 12103	SLIT WASHER
147	4822 532 12105	SLIT WASHER
148	4822 403 70447	PINCH ROLLER ARM ASSEMBLY
149	4822 403 70441	PINCH ROLLER PRESS LEVER
150	4822 492 33287	TENSION SPRING
151	4822 532 12103	SLIT WASHER
152	4822 522 33109	PINCH ROLLER CAM
153	4822 403 70448	GUIDE ARM ASSY
154	4822 492 42564	TORSION SPRING

155	4822 522 33473	HALF LOADING GEAR ASSY	Q9	4822 130 60862	TRANSISTOR
156	4822 532 12104	SLIT WASHER	Q10	4822 130 63628	TRANSISTOR
157	4822 403 71175	CANCELL LEVER ASSY			
157A	4822 492 33293	TENSION SPRING	Q11	4822 130 61544	TRANSISTOR
157B	4822 492 33289	TENSION SPRING	Q12	4822 130 62796	FE TRANSISTOR
157C	4822 492 33294	TENSION SPRING	Q13	4822 130 60856	TRANSISTOR
158	4822 403 70451	HOOK ASSEMBLY	Q14	4822 130 60669	TRANSISTOR
158A	4822 492 33291	TENSION SPRING	Q15	4822 130 60862	TRANSISTOR
159	4822 403 10315	MAIN BRAKE ASSY(SUPPLY)	Q16	4822 130 60669	TRANSISTOR
160	4822 403 10316	MAIN BRAKE ASSY(TAKE UP)			
			D1	4822 209 83931	ZENER DIODE
161	4822 492 33292	TENSION SPRING	D2	4822 130 32778	DIODE
162	4822 403 70736	SUB BRAKE ASSY(TAKE UP)	D3	4822 130 32778	DIODE
163	4822 492 33288	TENSION SPRING	D4	4822 130 32778	DIODE
164	4822 403 70715	CAPSTAN BRAKE ASSEMBLY			
165	4822 492 52334	COMPRESSION SPRING	R1	4822 116 83155	RESISTOR 1.5kR,1/10W
166	4822 381 11429	LED PRISM	R2	4822 116 83156	RESISTOR 15kR,1/10W
167	4822 276 13134	REC SAFETY SWITCH	R3	4822 116 83174	RESISTOR 330R,1/10W
168	4822 277 21697	SLIDE SWITCH	R4	4822 116 83145	RESISTOR 1kR,1/10W
169	4822 502 13816	SCREW	R6	4822 116 83164	RESISTOR 22kR,1/10W
170	4822 502 13819	SCREW,X2	R7	4822 116 83164	RESISTOR 22kR,1/10W
			R8	4822 116 83157	RESISTOR 150kR,1/10W
171	4822 502 13809	SCREW,X2	R9	4822 116 83157	RESISTOR 150kR,1/10W
172	4822 403 71094	CLEANER ASSEMBLY	R10	4822 116 83176	RESISTOR 33kR,1/10W
172A	4822 528 90869	CLEANER			
172B	4822 528 70839	CLEANER ROLLER	R11	4822 116 83167	RESISTOR 270R,1/10W
172C	4822 532 12192	SLIT WASHER	R12	4822 116 83146	RESISTOR 10kR,1/10W
172D	4822 532 12273	CLEANER LEVER	R13	4822 116 83146	RESISTOR 10kR,1/10W
172E	4822 492 42683	TORSION SPRING	R14	4822 116 83156	RESISTOR 15kR,1/10W
173	4822 532 11797	SLIT WASHER	R15	4822 116 83159	RESISTOR 1.8kR,1/10W
			R16	4822 116 83156	RESISTOR 15kR,1/10W
			R17	4822 116 83159	RESISTOR 1.8kR,1/10W
			R18	4822 116 83156	RESISTOR 15kR,1/10W
			R19	4822 116 83159	RESISTOR 1.8kR,1/10W
MAIN BOARD ASSEMBLY					
ETH1	4822 492 71387	EARTH PLATE	R21	4822 116 83165	RESISTOR 220kR,1/10W
SCW1	4822 502 13827	SCREW,RF CONVERTER	R22	4822 116 83188	RESISTOR 560kR,1/10W
SCW2	4822 502 30731	SCREW,X2 TERMINAL BOARD	R23	4822 116 83168	RESISTOR 2.7kR,1/10W
			R24	4822 116 83163	RESISTOR 2.2kR,1/10W
JA702	4822 265 31106	PIN JACK,V IN/OUT	R25	4822 116 83183	RESISTOR 47kR,1/10W
JA703	4822 265 31141	PIN JACK,A IN/OUT	R26	4822 116 83183	RESISTOR 47kR,1/10W
			R27	4822 116 83183	RESISTOR 47kR,1/10W
CN201	4822 267 51374	CONNECTOR,(2-16) PRE/REC (VR254/55)	R28	4822 116 83163	RESISTOR 2.2kR,1/10W
			R29	4822 116 83146	RESISTOR 10kR,1/10W
CN201	4822 267 31793	CONNECTOR,(2-19) PRE/REC (VR454/55)	R30	4822 116 83148	RESISTOR 1MR,1/10W
CN301	4822 265 31111	CONNECTOR,(1-4) A/C HEAD	R31	4822 116 83193	RESISTOR 68kR,1/10W
CN302	4822 265 20646	CONNECTOR,(1-2) FE HEAD	R32	4822 117 10019	RESISTOR 39kR,1/10W
CN401	4822 265 31143	CONNECTOR,(1-3) A/C HEAD	R33	4822 116 83195	RESISTOR 820R,1/10W
CN402	4822 267 41115	CONNECTOR,(1-4) DRUM MOTOR	R34	4822 116 83163	RESISTOR 2.2kR,1/10W
			R35	4822 116 83164	RESISTOR 22kR,1/10W
CN601	4822 267 51364	CONNECTOR,(1-18) DECK TERMINAL	R36	4822 116 83156	RESISTOR 15kR,1/10W
CN801	4822 267 31776	CONNECTOR,(1-2) POWER CORD	R37	4822 116 83146	RESISTOR 10kR,1/10W
CN802	4822 267 51373	CONNECTOR,(1-9) FRONT	R38	4822 116 83192	RESISTOR 6.8kR,1/10W
CN810	4822 267 51373	CONNECTOR,(1-9) FRONT (VR454/55)	R39	4822 116 83151	RESISTOR 12kR,1/10W
-TUNER SECTION-					
RF1	4822 214 33887	RF CONVERTER	C1	4822 124 80715	E CAPACITOR 33UF,16V
TNR1	4822 210 10606	TUNER	C2	4822 121 43963	F CAPACITOR 0.015UF,50V
TNR2	4822 210 10607	IF UNIT	C3	4822 121 43966	F CAPACITOR 0.033UF,50V
			C4	4822 126 11611	CAPACITOR 0.01UF,25V
IC1	4822 209 30246	IC (AN1358)	C5	4822 124 23851	E CAPACITOR 10UF,50V
			C6	4822 124 23286	E CAPACITOR 10UF,16V
			C7	4822 124 23851	E CAPACITOR 10UF,50V
Q1	4822 130 61906	TRANSISTOR	C11	4822 126 11651	CAPACITOR 0.0012UF,50V
Q2	4822 130 62589	TRANSISTOR	C12	4822 124 80946	E CAPACITOR 0.22UF,50V
Q3	4822 130 62793	TRANSISTOR	C13	4822 126 11613	CAPACITOR 0.0022UF,50V
Q6	4822 130 60669	TRANSISTOR	C14	4822 126 11636	CAPACITOR 0.022UF,50V
Q7	4822 130 60862	TRANSISTOR	C15	4822 124 23854	E CAPACITOR 0.47UF,50V
Q8	4822 130 60862	TRANSISTOR	C17	4822 124 23852	E CAPACITOR 2.2UF,50V
			T1	4822 157 70714	COIL
			WR1	4822 321 61775	COAXIAL CABLE

-VIDEO SECTION-

IC270	4822 209 31897	IC (BA7045)
Q201	4822 130 41698	TRANSISTOR
Q202	4822 130 41698	TRANSISTOR
Q203	4822 130 42431	TRANSISTOR
Q270	4822 130 41698	TRANSISTOR
Q271	4822 130 41698	TRANSISTOR
Q272	4822 130 42431	TRANSISTOR
Q273	4822 130 42431	TRANSISTOR
D201	4822 130 32778	DIODE (VR254/55)
D202	4822 130 32778	DIODE
D250	4822 130 32778	DIODE
R201	4822 050 13901	RESISTOR 390R,1/2W
R202	4822 116 81538	RESISTOR 15kR,1/6W
R203	4822 116 83146	RESISTOR 10kR,1/10W
R204	4822 116 81536	RESISTOR 1kR,1/6W
R205	4822 116 83194	RESISTOR 75R,1/10W
R206	4822 116 83145	RESISTOR 1kR,1/10W
R207	4822 116 83145	RESISTOR 1kR,1/10W
R208	4822 116 83155	RESISTOR 1.5kR,1/10W
R209	4822 116 83186	RESISTOR 5.6kR,1/10W
R210	4822 116 83186	RESISTOR 5.6kR,1/10W
R211	4822 117 10502	RESISTOR 36kR,1/10W
R212	4822 116 83176	RESISTOR 33kR,1/10W (VR254/55)
R214	4822 116 83163	RESISTOR 2.2kR,1/10W
R220	4822 116 83147	RESISTOR 100kR,1/10W (VR254/55)
R220	4822 116 83142	RESISTOR 0R,1/10W (VR454/55)
R221	4822 116 83185	RESISTOR 560R,1/10W
R222	4822 116 83145	RESISTOR 1kR,1/10W (VR454/55)
R223	4822 116 83192	RESISTOR 6.8kR,1/10W
R270	4822 116 83167	RESISTOR 270R,1/10W
R271	4822 116 83167	RESISTOR 270R,1/10W
R272	4822 116 83341	RESISTOR 1.1kR,1/10W
R273	4822 116 83156	RESISTOR 15kR,1/10W
R274	4822 116 83182	RESISTOR 4.7kR,1/10W
R275	4822 116 83163	RESISTOR 2.2kR,1/10W
R276	4822 117 10016	RESISTOR 1.2kR,1/10W
R277	4822 116 81751	RESISTOR 5.6kR,1/6W
R278	4822 116 83146	RESISTOR 10kR,1/10W
R279	4822 116 83181	RESISTOR 470R,1/10W
R280	4822 111 31002	RESISTOR 3.6kR,1/6W
R283	4822 117 10504	RESISTOR 75kR,1/10W
R284	4822 116 83171	RESISTOR 270kR,1/10W
R285	4822 116 83192	RESISTOR 6.8kR,1/10W
R286	4822 116 83145	RESISTOR 1kR,1/10W
R287	4822 116 83195	RESISTOR 820R,1/10W
R290	4822 117 10437	RESISTOR 510R,1/10W
R291	4822 116 83145	RESISTOR 1kR,1/10W
C201	4822 124 23841	E CAPACITOR 1000UF,6.3V
C202	4822 124 23846	E CAPACITOR 47UF,16V
C203	4822 126 11601	CAPACITOR 0.01UF,50V
C204	4822 124 23846	E CAPACITOR 47UF,16V
C205	4822 124 23848	E CAPACITOR 4.7UF,25V
C207	4822 126 11601	CAPACITOR,B 0.01UF,50V
C208	4822 126 11601	CAPACITOR 0.01UF,50V
C210	4822 126 13055	CAPACITOR 0.047UF,50V
C211	4822 126 12383	CAPACITOR 0.001UF,50V
C270	4822 126 11601	CAPACITOR 0.01UF,50V
C271	4822 126 11601	CAPACITOR 0.01UF,50V
C272	4822 126 11601	CAPACITOR 0.01UF,50V
C273	4822 126 11647	CAPACITOR 0.01UF,16V
C274	4822 124 23843	E CAPACITOR 47UF,10V

C275	4822 126 11601	CAPACITOR 0.01UF,50V
C276	4822 126 12899	CAPACITOR 20pF,160V
C278	4822 126 13321	CAPACITOR 15pF,160V
C279	4822 126 11601	CAPACITOR 0.01UF,50V
C280	4822 126 12901	CAPACITOR 24pF,160V
C281	4822 126 12903	CAPACITOR 0.0027UF,50V
C282	4822 124 23287	E CAPACITOR 1UF,50V
C283	4822 126 11601	CAPACITOR 0.01UF,50V
C284	4822 126 12897	CAPACITOR 20pF,16V
C286	4822 126 11833	CAPACITOR 27pF,50V
C287	4822 126 12894	CAPACITOR 4pF,50V
C288	4822 126 11601	CAPACITOR 0.01UF,50V
C289	4822 126 12384	CAPACITOR 33pF,50V
C612	4822 124 80806	E CAPACITOR 100UF,6.3V
C836	4822 124 80948	E CAPACITOR 470UF,10V
C851	4822 124 80806	E CAPACITOR 100UF,6.3V
C855	4822 124 80806	E CAPACITOR 100UF,6.3V
L201	4822 157 60104	COIL 100UH
L270	4822 157 60104	COIL 100UH
L271	4822 157 70137	COIL 39UH
L272	4822 157 62372	COIL 10UH
L273	4822 157 90157	COIL 27UH
DL270	4822 320 40304	DELAY LINE

-AUDIO SECTION-

IC301	4822 209 32735	IC (BA7795LS)
Q303	4822 130 42431	TRANSISTOR
Q304	4822 130 61565	TRANSISTOR
Q305	4822 130 61565	TRANSISTOR
D303	4822 130 32778	DIODE
R319	4822 116 83145	RESISTOR 1kR,1/10W
R320	4822 116 83145	RESISTOR 1kR,1/10W
R322	4822 116 83169	RESISTOR 27kR,1/10W
R323	4822 116 83192	RESISTOR 6.8kR,1/10W
R324	4822 116 83192	RESISTOR 6.8kR,1/10W
R325	4822 116 83151	RESISTOR 12kR,1/10W
R326	4822 117 10431	RESISTOR 3.3R,1/10W
R327	4822 117 10435	RESISTOR 82R,1/6W
R328	4822 050 23903	RESISTOR 39kR,1/6W
R329	4822 116 83151	RESISTOR 12kR,1/10W
R330	4822 116 83186	RESISTOR 5.6kR,1/10W
R331	4822 117 10016	RESISTOR 1.2kR,1/10W
R332	4822 116 83167	RESISTOR 270R,1/10W
R333	4822 116 83156	RESISTOR 15kR,1/10W
R334	4822 116 83185	RESISTOR 560R,1/10W (VR454/55)
R335	4822 116 83164	RESISTOR 22kR,1/10W
R336	4822 117 10433	RESISTOR 82R,1/10W
R337	4822 116 83171	RESISTOR 270kR,1/10W
R338	4822 116 83196	RESISTOR 8.2kR,1/10W
R339	4822 116 83192	RESISTOR 6.8kR,10W (VR454/55)
R340	4822 116 83182	RESISTOR 4.7kR,1/10W
R341	4822 116 83192	RESISTOR 6.8kR,1/10W
R342	4822 116 83184	RESISTOR 4.7MR,1/10W
R343	4822 116 83161	RESISTOR 18kR,1/10W
R344	4822 116 81694	RESISTOR 47kR,1/6W
R345	4822 116 83156	RESISTOR 15kR,1/10W
R346	4822 116 83156	RESISTOR 15kR,1/10W
R347	4822 116 83183	RESISTOR 47kR,1/10W
R348	4822 050 11803	RESISTOR 18kR,1/6W
R349	4822 116 83146	RESISTOR 10kR,1/10W
R350	4822 050 11203	RESISTOR 12kR,1/6W

R351	4822 116 83183	RESISTOR 47kR.1/10W	R436	4822 116 83145	RESISTOR 1kR.1/10W
R352	4822 050 12703	RESISTOR 27kR.1/6W	R438	4822 050 11004	RESISTOR 100kR.1/6W
R353	4822 117 10017	RESISTOR 220R.1/10W	R439	4822 116 83156	RESISTOR 15kR.1/10W
R354	4822 116 81536	RESISTOR 1kR.1/6W	R440	4822 116 83185	RESISTOR 560R.1/10W
R355	4822 116 81536	RESISTOR 1kR.1/6W			
C313	4822 126 11614	CAPACITOR 330pF.50V	R441	4822 116 83182	RESISTOR 4.7kR.1/10W
C314	4822 121 43968	F CAPACITOR 0.082UF.50V	R442	4822 116 83187	RESISTOR 56kR.1/10W
C315	4822 124 23851	E CAPACITOR 10UF.50V	R443	4822 116 83147	RESISTOR 100kR.1/10W
C316	4822 126 11654	CAPACITOR 0.0047UF.50V	C401	4822 126 11612	CAPACITOR 0.001UF.50V
C317	4822 126 12466	CAPACITOR 0.022UF.50V	C402	4822 124 80945	E CAPACITOR 22UF.25V
C318	4822 126 11613	CAPACITOR.B 0.0022UF.50V	C403	4822 124 80945	E CAPACITOR 22UF.25V
C319	4822 124 23846	E CAPACITOR 47UF.16V	C404	4822 126 12819	CAPACITOR 180pF.50V
C320	4822 126 12911	CAPACITOR 0.015UF.25V	C405	4822 126 11612	CAPACITOR 0.001UF.50V
			C407	4822 126 11612	CAPACITOR 0.001UF.50V
C321	4822 124 23287	E CAPACITOR 1UF.50V	C408	4822 121 70362	F CAPACITOR 0.056UF.50V
C322	4822 126 13318	CAPACITOR.B 0.022UF.25V	C409	4822 126 11612	CAPACITOR 0.001UF.50V
C323	4822 126 12904	CAPACITOR 680pF.50V	C410	4822 126 11611	CAPACITOR 0.01UF.25V
C324	4822 124 23848	E CAPACITOR 4.7UF.25V			
C325	4822 124 80715	E CAPACITOR 33UF.16V	C411	4822 126 11611	CAPACITOR 0.01UF.25V
C326	4822 126 12463	CAPACITOR 0.012UF.50V	C412	4822 124 23851	E CAPACITOR 10UF.50V
C327	4822 126 12801	CAPACITOR 0.022UF.25V	C413	4822 121 43974	F CAPACITOR 0.22UF.50V
C328	4822 124 80945	E CAPACITOR 22UF.25V	C414	4822 126 12801	CAPACITOR 0.022UF.25V
C329	4822 126 12801	CAPACITOR 0.022UF.25V	C415	4822 124 80359	E CAPACITOR 4.7UF.50V
C330	4822 126 12801	CAPACITOR 0.022UF.25V	C416	4822 124 80359	E CAPACITOR 4.7UF.50V
			C417	4822 124 23851	E CAPACITOR 10UF.50V
C331	4822 124 23851	E CAPACITOR 10UF.50V	C418	4822 124 23851	E CAPACITOR 10UF.50V
C347	4822 124 23851	E CAPACITOR 10UF.50V	C419	4822 126 12893	CAPACITOR 0.022UF.16V
			C420	4822 121 70011	F CAPACITOR 0.33UF.50V
L303	4822 157 63399	COIL 12mH	C421	4822 126 11858	CAPACITOR 470pF.50V
T301	4822 148 81344	\$ OSC TRANSFORMER	C422	4822 126 11612	CAPACITOR 0.001UF.50V
-SERVO SECTION-					
IC401	4822 209 32536	IC (JCP0039)	C431	4822 124 80945	E CAPACITOR 22UF.25V
IC402	4822 209 31899	IC (LVA521S)	C432	4822 126 11611	CAPACITOR 0.01UF.25V
Q441	4822 130 42431	TRANSISTOR	C433	4822 126 12885	CAPACITOR 22pF.50V
D401	4822 130 32778	DIODE	C434	4822 126 12443	CAPACITOR 47pF.50V
D402	4822 130 32778	DIODE	C435	4822 126 11602	CAPACITOR 39pF.50V
D403	4822 130 32778	DIODE	C436	4822 126 11832	CAPACITOR 100pF.50V
R401	4822 116 83185	RESISTOR 560R.1/10W	C437	4822 124 80945	E CAPACITOR 22UF.25V
R402	4822 116 83145	RESISTOR 1kR.1/10W	C438	4822 126 11611	CAPACITOR 0.01UF.25V
R403	4822 116 83148	RESISTOR 1MR.1/10W	C439	4822 126 11832	CAPACITOR 100pF.50V
R404	4822 116 83146	RESISTOR 10kR.1/10W			
R405	4822 117 10023	RESISTOR 470kR.1/10W	C836	4822 124 80948	E CAPACITOR 470UF.10V
R406	4822 116 83145	RESISTOR 1kR.1/10W	C854	4822 124 80945	E CAPACITOR 22UF.25V
R407	4822 116 83145	RESISTOR 1kR.1/10W			
R408	4822 116 81536	RESISTOR 1kR.1/6W	X401	4822 242 81342	\$ CRYSTAL RESONATOR
R409	4822 116 81536	RESISTOR 1kR.1/6W	CP401	5322 157 53342	\$ CIRCUIT PROTECTOR
R410	4822 116 83164	RESISTOR 22kR.1/10W	-SYSTEM CONTROL-		
R411	4822 116 83166	RESISTOR 2.2MR.1/10W	IC601	4822 209 33639	QFP IC (MCU) (HD6433926A73F)
R412	4822 116 83183	RESISTOR 47kR.1/10W	IC602	4822 209 30236	IC (CAT93C46P)
R413	4822 116 83163	RESISTOR 2.2kR.1/10W	IC603	4822 209 33641	IC (MM1255XF)
R414	4822 050 11202	RESISTOR 1.2kR.1/6W	Q601	4822 130 61553	TRANSISTOR
R415	4822 116 83175	RESISTOR 3.3kR.1/10W	Q602	4822 130 61553	TRANSISTOR
R416	4822 116 83164	RESISTOR 22kR.1/10W	Q603	4822 130 61553	TRANSISTOR
R417	4822 116 83164	RESISTOR 22kR.1/10W	Q604	4822 130 61553	TRANSISTOR
R418	4822 116 83148	RESISTOR 1MR.1/10W	Q605	4822 130 61553	TRANSISTOR (VR254/55)
R419	4822 050 12703	RESISTOR 27kR.1/6W	Q605	4822 130 61936	TRANSISTOR (VR454/55)
R421	4822 116 83171	RESISTOR 270kR.1/10W	Q606	4822 130 61553	TRANSISTOR
R423	4822 116 83148	RESISTOR 1MR.1/10W	Q607	4822 130 61553	TRANSISTOR
R424	4822 116 83169	RESISTOR 27kR.1/10W	Q608	4822 130 61553	TRANSISTOR
R429	4822 117 10019	RESISTOR 39kR.1/10W	Q609	4822 130 61553	TRANSISTOR
R430	4822 116 83223	RESISTOR 3.3MR.1/10W	Q610	4822 130 63496	TRANSISTOR
R431	4822 116 83171	RESISTOR 270kR.1/10W	Q611	4822 130 63596	TRANSISTOR
R432	4822 116 83196	RESISTOR 8.2kR.1/10W	D601	4822 130 81748	DIODE
			D602	4822 130 81748	DIODE

D605	4822 130 32778	DIODE	R676	4822 116 83163	RESISTOR 2.2kR.1/10W
D606	4822 130 32778	DIODE	R677	4822 116 83182	RESISTOR 4.7kR.1/10W
D607	4822 130 32778	DIODE	R680	4822 116 83178	RESISTOR 390R.1/10W
D610	4822 130 32778	DIODE			
D611	4822 130 32778	DIODE	R681	4822 117 10017	RESISTOR 220R.1/10W
D612	4822 130 32778	DIODE	R682	4822 116 83147	RESISTOR 100kR.1/10W
			R683	4822 116 83147	RESISTOR 100kR.1/10W
			R684	4822 116 83147	RESISTOR 100kR.1/10W
D672	4822 130 81748	DIODE	C610	4822 124 80947	E CAPACITOR 2200UF.6.3V
D673	4822 130 81748	DIODE	C611	4822 126 11601	CAPACITOR 0.01UF.50V
			C612	4822 124 80806	E CAPACITOR 100UF.6.3V
R601	4822 116 83182	RESISTOR 4.7kR.1/10W	C613	4822 126 11833	CAPACITOR 27pF.50V
R602	4822 116 83182	RESISTOR 4.7kR.1/10W	C614	4822 125 60201	TRIM CAPACITOR
R603	4822 116 83145	RESISTOR 1kR.1/10W	C615	4822 126 11601	CAPACITOR 0.01UF.50V
R605	4822 116 82086	RESISTOR 680R.1/6W	C616	4822 124 23286	E CAPACITOR 10UF.16V
R606	4822 116 81536	RESISTOR 1kR.1/6W	C617	4822 126 11601	CAPACITOR 0.01UF.50V
R607	4822 116 81641	RESISTOR 4.7kR.1/6W	C619	4822 126 11632	CAPACITOR 0.1UF.25V
R608	4822 116 83182	RESISTOR 4.7kR.1/10W			
R610	4822 116 83182	RESISTOR 4.7kR.1/10W	C621	4822 124 23286	E CAPACITOR 10UF.16V
			C622	4822 124 23286	E CAPACITOR 10UF.16V
R611	4822 116 83182	RESISTOR 4.7kR.1/10W	C624	4822 126 12401	CAPACITOR 270pF.50V
R612	4822 116 83182	RESISTOR 4.7kR.1/10W			
R613	4822 116 83182	RESISTOR 4.7kR.1/10W	L601	4822 157 60104	COIL 100UH
R614	4822 116 83182	RESISTOR 4.7kR.1/10W			
R615	4822 116 83145	RESISTOR 1kR.1/10W	CF601	4822 242 81533	RESONATOR
R616	4822 116 83175	RESISTOR 3.3kR.1/10W			
R617	4822 116 83175	RESISTOR 3.3kR.1/10W	X601	4822 242 81531	CRYSTAL RESONATOR
R618	4822 116 83145	RESISTOR 1kR.1/10W			
			TH601	4822 111 91712	POSI THERMISTOR
R622	4822 116 83182	RESISTOR 4.7kR.1/10W	CP601	4822 209 63612	CIRCUIT PROTECTOR
R623	4822 116 81641	RESISTOR 4.7kR.1/6W	CP602	4822 209 63611	CIRCUIT PROTECTOR
R624	4822 116 83182	RESISTOR 4.7kR.1/10W			
R625	4822 116 83182	RESISTOR 4.7kR.1/10W			
R627	4822 116 83145	RESISTOR 1kR.1/10W			
R628	4822 116 83145	RESISTOR 1kR.1/10W			
R629	4822 116 83145	RESISTOR 1kR.1/10W			
R630	4822 116 83145	RESISTOR 1kR.1/10W			
R631	4822 116 83168	RESISTOR 2.7kR.1/10W			
R632	4822 116 83145	RESISTOR 1kR.1/10W	Q801	4822 130 63371	FE TRANSISTOR
R633	4822 116 83145	RESISTOR 1kR.1/10W	Q802	4822 130 62794	TRANSISTOR
R634	4822 116 83182	RESISTOR 4.7kR.1/10W			
R635	4822 116 83182	RESISTOR 4.7kR.1/10W	Q831	4822 130 42431	TRANSISTOR
R637	4822 116 83182	RESISTOR 4.7kR.1/10W			
R638	4822 116 83182	RESISTOR 4.7kR.1/10W	Q851	4822 130 62794	TRANSISTOR
R639	4822 116 83147	RESISTOR 100kR.1/10W	Q852	4822 130 62801	TRANSISTOR
R640	4822 116 83142	RESISTOR 0R.1/10W	Q853	4822 130 42431	TRANSISTOR
			Q854	4822 130 61903	TRANSISTOR
			Q855	4822 130 61892	TRANSISTOR
R641	4822 116 83182	RESISTOR 4.7kR.1/10W			
R642	4822 116 83145	RESISTOR 1kR.1/10W	D801	4822 130 82698	DIODE
R645	4822 116 81641	RESISTOR 4.7kR.1/6W	D802	4822 130 82698	DIODE
R648	4822 116 81536	RESISTOR 1kR.1/6W	D803	4822 130 82698	DIODE
			D804	4822 130 82698	DIODE
R655	4822 116 83176	RESISTOR 33kR.1/10W	D806	4822 130 32778	DIODE
R656	4822 116 83183	RESISTOR 47kR.1/10W	D807	4822 130 83712	ZENER DIODE
R657	4822 116 83181	RESISTOR 470R.1/10W	D808	4822 130 32778	DIODE
R658	4822 116 83176	RESISTOR 33kR.1/10W	D809	4822 130 82686	FR DIODE
R659	4822 116 81641	RESISTOR 4.7kR.1/6W	D810	4822 130 82686	FR DIODE
R660	4822 116 83146	RESISTOR 10kR.1/10W			
			D811	4822 130 83742	ZENER DIODE
R661	4822 116 81636	RESISTOR 10kR.1/6W			
R662	4822 116 83182	RESISTOR 4.7kR.1/10W	D831	4822 130 82687	FR DIODE
R663	4822 116 83146	RESISTOR 10kR.1/10W	D832	4822 130 82696	FR DIODE
R664	4822 116 83146	RESISTOR 10kR.1/10W	D833	4822 130 82696	FR DIODE
R665	4822 116 83148	RESISTOR 1MR.1/10W	D835	4822 130 82687	FR DIODE
R666	4822 116 83146	RESISTOR 10kR.1/10W	D836	4822 130 81377	DIODE
R667	4822 116 83147	RESISTOR 100kR.1/10W	D837	4822 130 82687	FR DIODE
R669	4822 116 83147	RESISTOR 100kR.1/10W	D838	4822 130 32778	DIODE
R670	4822 050 11203	RESISTOR 12kR.1/6W	D840	4822 130 83149	ZENER DIODE
R671	4822 116 83176	RESISTOR 33kR.1/10W	D841	4822 130 83156	ZENER DIODE
R672	4822 116 83146	RESISTOR 10kR.1/10W	D842	4822 130 82693	ZENER DIODE
R673	4822 116 83146	RESISTOR 10kR.1/10W	D843	4822 130 32778	DIODE
R674	4822 116 83156	RESISTOR 15kR.1/10W	D852	4822 130 83304	DIODE
R675	4822 116 83146	RESISTOR 10kR.1/10W	D853	4822 130 32778	DIODE

-SWITCHING REGULATOR SECTION-

R804	4822 116 83333	RESISTOR 330kR,1/6W
R805	4822 116 83333	RESISTOR 330kR,1/6W
R806	4822 116 81536	RESISTOR 1kR,1/6W
R807	4822 050 15603	RESISTOR 56kR,1/6W
R808	4822 117 10052	MF RESISTOR 0.39R,1W
R809	4822 116 83141	OMF RESISTOR 68kR,2W
R810	4822 117 10008	OMF RESISTOR 330R,2W

R811	4822 116 81537	RESISTOR 1.5kR,1/6W
R812	4822 116 81729	RESISTOR 470R,1/6W
R813	4822 116 81536	RESISTOR 1kR,1/6W
R814	4822 116 81727	RESISTOR 3.3kR,1/6W
R815	4822 111 30976	RESISTOR 68kR,1/6W
R816	4822 116 83333	RESISTOR 330kR,1/6W

R831	4822 117 11412	MF RESISTOR 1.8R,1W
R832	4822 116 83204	\$ FUSIBLE RESISTOR 47R,1/4W
R833	4822 117 10425	\$ OMF RESISTOR 2.2kR,2W
R834	4822 050 24871	CMF RESISTOR 487R,1/4W
R835	4822 116 81729	RESISTOR 470R,1/6W
R836	4822 050 23741	CMF RESISTOR 374R,1/4W
R837	4822 050 11202	RESISTOR 1.2kR,1/6W

R851	4822 116 83181	RESISTOR 470R,1/10W
R852	4822 116 81694	RESISTOR 47kR,1/6W
R853	4822 116 83146	RESISTOR 10kR,1/10W
R854	4822 116 83181	RESISTOR 470R,1/10W

R855	4822 100 12046	V RESISTOR,SWD 5V
R856	4822 116 81729	RESISTOR 470R,1/6W
R858	4822 116 83145	RESISTOR 1kR,1/10W

R861	4822 116 83145	RESISTOR 1kR,1/10W
R862	4822 116 83185	RESISTOR 560R,1/10W
R863	4822 116 81729	RESISTOR 470R,1/6W

C802	4822 121 70358	\$ F CAPACITOR 0.022UF
C804	4822 126 12794	\$ CAPACITOR 100pF
C805	4822 126 12794	\$ CAPACITOR 100pF
C809	4822 126 12433	\$ CAPACITOR 0.001UF
C810	4822 124 23819	E CAPACITOR 68UF,400V

C812	4822 124 23852	E CAPACITOR 2.2UF,50V
C813	4822 124 11223	CAPACITOR 0.0047UF,1KV
C816	4822 121 70515	CAPACITOR 0.0056UF,50V
C817	4822 126 10419	CAPACITOR 100pF,50V
C819	4822 126 10424	CAPACITOR 330pF,50V

C821	4822 121 43972	F CAPACITOR 0.1UF,50V
C831	4822 124 23856	E CAPACITOR 22UF,63V
C832	4822 124 80656	E CAPACITOR 470UF,16V
C833	4822 124 80655	E CAPACITOR 470UF,10V
C834	4822 124 23853	E CAPACITOR 22UF,50V
C835	4822 124 80654	E CAPACITOR 100UF,10V
C836	4822 124 23844	E CAPACITOR 470UF,10V
C837	4822 124 80896	E CAPACITOR 220UF,25V
C838	4822 124 23854	E CAPACITOR 0.47UF,50V
C839	4822 121 70224	F CAPACITOR 0.01UF,50V
C840	4822 124 80888	E CAPACITOR 220UF,25V

C842	4822 124 23098	E CAPACITOR 470UF,16V
C851	4822 124 80806	E CAPACITOR 100UF,6.3V
C852	4822 124 23286	E CAPACITOR 10UF,16V
C853	4822 124 42285	E CAPACITOR 100UF,16V
C854	4822 124 80944	E CAPACITOR 22UF,6.3V
C855	4822 124 80806	E CAPACITOR 100UF,6.3V
C856	4822 121 70514	F CAPACITOR 0.001UF,50V

L831	4822 157 70119	COIL
L832	4822 157 70119	COIL
L833	4822 157 70119	COIL
L851	4822 157 71241	COIL

PC801	4822 130 83425	\$ PH COUPLER
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T801	4822 148 81391	\$ SW TRANS
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SLD1	4822 466 62559	\$ SHIELD CASE
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FC801	4822 256 92131	\$ FUSE CLIP
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FC802	4822 256 92131	\$ FUSE CLIP
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LF801	4822 157 712624	\$ LINE FILTER
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CP801	4822 209 63611	\$ CIRCUIT PROTECTOR
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F801	4822 070 31252	\$ FUSE T1.2A
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-TERMINAL BOARD SECTION-

D751	4822 130 32778	DIODE
D752	4822 130 32778	DIODE

R701	4822 116 83194	RESISTOR 75R,1/10W (VR254/55)
R703	4822 116 83142	RESISTOR 0R,1/10W

L701	4822 157 60438	COIL 10UH
L702	4822 157 60438	COIL 10UH

VIDEO UNIT BOARD ASSMEBLY

PWBA1	4822 214 60227	VIDEO UNIT BOARD ASSEMBLY
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IC1	4822 209 32733	IC (TL8839P)
IC2	4822 209 33492	IC (JCP0035-2)

Q1	4822 130 60862	TRANSISTOR
Q2	4822 130 60669	TRANSISTOR
Q3	4822 130 60862	TRANSISTOR
Q4	4822 130 60669	TRANSISTOR
Q5	4822 130 60669	TRANSISTOR
Q6	4822 130 60669	TRANSISTOR
Q7	4822 130 60669	TRANSISTOR
Q8	4822 130 63164	TRANSISTOR
Q9	4822 130 60669	TRANSISTOR
Q10	4822 130 60862	TRANSISTOR

Q11	4822 130 60997	TRANSISTOR
Q12	4822 130 60997	TRANSISTOR
Q13	4822 130 60854	TRANSISTOR
Q14	4822 130 60862	TRANSISTOR
Q15	4822 130 60669	TRANSISTOR

D1	4822 130 32778	DIODE
D2	4822 130 32778	DIODE
D3	4822 130 32778	DIODE
D4	4822 130 32778	DIODE
D5	4822 130 32778	DIODE
D7	4822 130 82708	DIODE

R1	4822 051 30681	RESISTOR 680R,1/16W
R2	4822 051 30475	RESISTOR 4.7MR,1/16W
R3	4822 051 30361	RESISTOR 360R,1/16W
R4	4822 051 30103	RESISTOR 10kR,1/16W
R5	4822 051 30102	RESISTOR 1kR,1/16W
R6	4822 051 30475	RESISTOR 4.7MR,1/16W
R7	4822 051 30681	RESISTOR 680R,1/16W
R8	4822 051 30102	RESISTOR 1kR,1/16W
R9	4822 051 30102	RESISTOR 1kR,1/16W
R10	4822 051 30621	RESISTOR 620R,1/16W

R11	4822 051 30331	RESISTOR 330R,1/16W
R12	4822 051 30182	RESISTOR 1.8kR,1/16W

R13	4822 051 30222	RESISTOR 2.2kR,1/16W	C22	4822 124 80894	E CAPACITOR 0.47UF,50V
R14	4822 051 30102	RESISTOR 1kR,1/16W	C24	4822 124 23848	E CAPACITOR 4.7UF,25V
R15	4822 051 30221	RESISTOR 220R,1/16W	C25	4822 124 23286	E CAPACITOR 10UF,16V
R16	4822 051 30332	RESISTOR 3.3kR,1/16W	C26	4822 124 80324	E CAPACITOR 22UF,10V
R17	4822 051 30392	RESISTOR 3.9kR,1/16W	C27	4822 124 23286	E CAPACITOR 10UF,16V
R18	4822 101 30673	V RESISTOR,NC BALANCE	C28	4822 124 23839	E CAPACITOR 100UF,6.3V
R19	4822 051 30222	RESISTOR 2.2kR,1/16W	C29	4822 126 10055	CAPACITOR 0.1UF,16V
R20	4822 051 30681	RESISTOR 680R,1/16W	C30	4822 126 11621	CAPACITOR 0.01UF,50V
R21	4822 051 30102	RESISTOR 1kR,1/16W	C31	4822 126 11621	CAPACITOR 0.01UF,50V
R22	4822 051 30122	RESISTOR 1.2kR,1/16W	C32	4822 124 23852	E CAPACITOR 2.2UF,50V
R23	4822 051 30272	RESISTOR 2.7kR,1/16W	C33	4822 124 23854	E CAPACITOR 0.47UF,50V
R24	4822 051 30821	RESISTOR 820R,1/16W	C34	4822 126 11628	CAPACITOR 62pF,50V
R25	4822 101 10852	V RESISTOR,PB Y LEVEL	C35	4822 126 11624	CAPACITOR 200pF,50V
R26	4822 051 30333	RESISTOR 33kR,1/16W	C36	4822 124 23848	E CAPACITOR 4.7UF,25V
R27	4822 051 30561	RESISTOR 560R,1/16W	C37	4822 126 11393	CAPACITOR 0.022UF,25V
R28	4822 101 10892	V RESISTOR,CARRIER	C38	4822 126 12889	CAPACITOR 13pF,50V
R29	4822 101 10851	V RESISTOR,DEVIATION	C39	4822 126 11621	CAPACITOR 0.01UF,50V
R30	4822 051 30432	RESISTOR 4.3kR,1/16W	C40	4822 124 23287	E CAPACITOR 1UF,50V
R31	4822 051 30122	RESISTOR 1.2kR,1/16W	C41	4822 126 11393	CAPACITOR 0.022UF,25V
R32	4822 051 30562	RESISTOR 5.6kR,1/16W	C42	4822 122 33986	CAPACITOR 100pF,50V
R33	4822 051 30561	RESISTOR 560R,1/16W	C43	4822 122 33988	CAPACITOR 39pF,50V
R34	4822 051 30102	RESISTOR 1kR,1/16W	C44	4822 124 80357	NP E CAPACITOR 4.7UF,25V
R35	4822 051 30272	RESISTOR 2.7kR,1/16W	C45	4822 124 23848	E CAPACITOR 4.7UF,25V
R36	4822 051 30103	RESISTOR 10kR,1/16W	C46	4822 126 11619	CAPACITOR 0.047UF,16V
R37	4822 117 10427	RESISTOR 510R,1/16W	C47	4822 124 23849	E CAPACITOR 0.1UF,50V
R38	4822 051 30103	RESISTOR 10kR,1/16W	C48	4822 124 23854	E CAPACITOR 0.47UF,50V
R39	4822 051 30102	RESISTOR 1kR,1/16W	C49	4822 126 11618	CAPACITOR 0.033UF,16V
R40	4822 051 30102	RESISTOR 1kR,1/16W	C50	4822 126 11621	CAPACITOR 0.01UF,50V
R41	4822 051 30102	RESISTOR 1kR,1/16W	C51	4822 126 10055	CAPACITOR 0.1UF,16V
R42	4822 101 10889	V RESISTOR,EE Y LEVEL	C52	4822 126 11621	CAPACITOR 0.01UF,50V
R43	4822 051 30823	RESISTOR 82kR,1/16W	C53	4822 126 10055	CAPACITOR 0.1UF,16V
R44	4822 051 30334	RESISTOR 330kR,1/16W	C54	4822 126 12888	CAPACITOR 0.047UF,16V
R45	4822 101 10851	V RESISTOR,W/D CLIP	C55	4822 124 23848	E CAPACITOR 4.7UF,25V
R46	4822 051 30103	RESISTOR 10kR,1/16W	C56	4822 126 11938	CAPACITOR 5pF,50V
R47	4822 051 30434	RESISTOR 430kR,1/16W	C57	4822 124 23287	E CAPACITOR 1UF,50V
R48	4822 051 30562	RESISTOR 5.6kR,1/16W	C58	4822 126 11621	CAPACITOR 0.01UF,50V
R49	4822 051 30105	RESISTOR 1MR,1/16W	C59	4822 126 10055	CAPACITOR 0.1UF,16V
R50	4822 051 30331	RESISTOR 330R,1/16W	C60	4822 124 23839	E CAPACITOR 100UF,6.3V
R51	4822 051 30102	RESISTOR 1kR,1/16W	C61	4822 126 11573	CAPACITOR 0.01UF,50V
R52	4822 101 10891	V RESISTOR,REC COLOR LEVEL	C62	4822 126 10017	CAPACITOR 0.0018UF,50V
R53	4822 051 30102	RESISTOR 1kR,1/16W	C63	4822 126 12891	CAPACITOR 30pF,50V
R54	4822 051 30271	RESISTOR 270R,1/16W	C64	4822 126 10055	CAPACITOR 0.1UF,16V
R55	4822 051 30333	RESISTOR 33kR,1/16W	C65	4822 126 12888	CAPACITOR 0.047UF,16V
R56	4822 051 30333	RESISTOR 33kR,1/16W	C69	4822 126 11573	CAPACITOR 0.01UF,25V
R57	4822 051 30102	RESISTOR 1kR,1/16W	C70	4822 126 11621	CAPACITOR 0.01UF,50V
R58	4822 051 30102	RESISTOR 1kR,1/16W			
R59	4822 051 30102	RESISTOR 1kR,1/16W	C71	4822 126 10055	CAPACITOR 0.1UF,16V
R60	4822 117 10495	RESISTOR 1.3kR,1/16W			
C1	4822 126 10027	CAPACITOR 220pF,50V	L1	4822 157 62373	COIL 120UH
C2	4822 126 13042	CAPACITOR 680pF,50V	L2	4822 153 10397	COIL 33UH
C3	4822 126 13317	CAPACITOR 330pF,50V	L3	4822 153 10397	COIL 33UH
C4	4822 126 10026	CAPACITOR 22pF,50V	L4	4822 157 90199	COIL 82UH
C5	4822 126 11621	CAPACITOR 0.01UF,50V	L5	4822 157 60066	COIL 220UH
C6	4822 126 11623	CAPACITOR 15pF,50V	L6	4822 157 70191	\$ COIL 100UH
C7	4822 126 10026	CAPACITOR 22pF,50V	L7	4822 157 62381	COIL 68UH
C8	4822 126 10034	CAPACITOR 68pF,50V	L8	4822 157 60104	\$ COIL 100UH
C9	4822 126 11622	CAPACITOR 120pF,50V	L9	4822 157 62373	COIL 120UH
C10	4822 126 11621	CAPACITOR 0.01UF,50V	L10	4822 157 62374	COIL 15UH
C11	4822 126 11619	CAPACITOR 0.047UF,16V	L11	4822 157 63398	COIL 560UH
C12	4822 124 23854	E CAPACITOR 0.47UF,50V	L12	4822 157 62381	COIL 68UH
C13	4822 126 11647	CAPACITOR 0.01UF,16V	LPF1	4822 156 21698	LOW PASS FILTER
C14	4822 126 10055	CAPACITOR 0.1UF,16V	LPF2	4822 156 21702	LOW PASS FILTER
C15	4822 126 10055	CAPACITOR 0.1UF,16V			
C16	4822 122 33988	CAPACITOR 39pF,50V	DL1	4822 320 40303	COMB FILTER
C17	4822 126 10025	CAPACITOR 18pF,50V			
C18	4822 126 10026	CAPACITOR 22pF,50V	X1	4822 242 81409	\$ CRYSTAL RESONATOR
C19	4822 124 80323	E CAPACITOR 47UF,6.3V			
C20	4822 126 11621	CAPACITOR 0.01UF,50V	CN1	4822 267 31537	PIN HEADER
C21	4822 126 10029	CAPACITOR 33pF,50V	CN2	4822 267 70341	PIN HEADER

CN3 4822 267 31537 PIN HEADER

CN1 4822 267 51369 FFC CONNECTOR.(1-9) MAIN
CN2 4822 267 51369 FFC CONNECTOR.(1-9) MAIN
(VR454/55)

AUDIO/CONTROL HEAD BOARD ASSEMBLY

PWBA6 4822 214 6019 AUDIO CONTROL HEAD BOARD
ASSEMBLY
CN1 4822 267 70336 WIRE TRAP.(1-7) MAIN

FRONT BOARD ASSMEBLY

IC1 4822 209 32734 \$ IC (UPD16312GB(E))
IC2 4822 209 32712 \$ IR DETECT UNIT

D1 4822 130 83431 DIODE
D2 4822 130 83431 DIODE
D3 4822 130 83431 DIODE
D6 4822 130 80793 ZENER DIODE

D21 4822 130 83431 DIODE.SP DISP (VR454/55)
D22 4822 130 83431 DIODE. NTSC
D23 4822 130 83431 DIODE.2 HEAD (VR254/55)

D51 4822 130 32778 DIODE
D52 4822 130 32778 DIODE

R1 4822 116 81636 RESISTOR 10kR.1/6W
R2 4822 116 81636 RESISTOR 10kR.1/6W
R3 4822 116 81636 RESISTOR 10kR.1/6W
R4 4822 116 81636 RESISTOR 10kR.1/6W
R5 4822 116 81641 RESISTOR 4.7kR.1/6W
R6 4822 116 81542 RESISTOR 2.2kR.1/6W
R7 4822 116 81641 RESISTOR 4.7kR.1/6W
R8 4822 050 11004 RESISTOR 100kR.1/6W
R9 4822 116 81636 RESISTOR 10kR.1/6W
R10 4822 116 81636 RESISTOR 10kR.1/6W

R11 4822 116 81638 RESISTOR 33kR.1/6W
R12 4822 116 81638 RESISTOR 33kR.1/6W
R13 4822 116 81638 RESISTOR 33kR.1/6W
R14 4822 116 81638 RESISTOR 33kR.1/6W

R20 4822 111 30937 RESISTOR.B 0R.1/6W

R51 4822 050 17509 RESISTOR 75R.1/6W

C1 4822 124 80661 E CAPACITOR 33UF.6.3V
C2 4822 126 12804 CAPACITOR 0.047UF.50V
C3 4822 124 23851 E CAPACITOR 10UF.50V
C4 4822 126 11644 CAPACITOR 56pF.50V
C5 4822 126 11643 CAPACITOR 33pF.50V
C6 4822 124 80323 E CAPACITOR 47UF.6.3V

L1 4822 157 70127 \$ COIL 100UH

S1 4822 276 13309 TACT SWITCH.POWER
S2 4822 276 13309 TACT SWITCH.STOP
S3 4822 276 13309 TACT SWITCH.FF
S4 4822 276 13309 TACT SWITCH.CH+
S5 4822 276 13309 TACT SWITCH.CH-
S6 4822 276 13309 TACT SWITCH.PLAY
S8 4822 276 13309 TACT SWITCH.REC
S9 4822 276 13309 TACT SWITCH.REW
S10 4822 276 13309 TACT SWITCH.PAL/MESE

FDP1 4822 130 91387 FLUORESCENT DISPLAY

HD1 4822 256 92082 FDP HOLDER(L)
HD2 4822 256 92083 FDP HOLDER(R)

JA51 4822 265 20678 PIN JACK.VIDEO IN (VR454/55)
JA52 4822 265 20678 PIN JACK.AUDIO IN (VR454/55)

PRE/REC AMP BOARD ASSEMBLY

PARTS FOR VR254/55

IC501 4822 209 32546 IC (BA7182AS)

Q503 4822 130 42431 TRANSISTOR
Q504 4822 130 42431 TRANSISTOR
Q506 4822 130 63144 TRANSISTOR
Q507 4822 130 63629 TRANSISTOR
Q508 4822 130 42593 TRANSISTOR

Q513 4822 130 63629 TRANSISTOR

R506 4822 116 83163 RESISTOR 2.2kR.1/10W
R507 4822 116 83155 RESISTOR 1.5kR.1/10W
R508 4822 116 83191 RESISTOR 680R.1/10W

R515 4822 116 82086 RESISTOR 680R.1/6W
R516 4822 116 81536 RESISTOR 1kR.1/6W
R518 4822 111 41569 RESISTOR 2.7kR.1/6W
R519 4822 116 83168 RESISTOR 2.7kR.1/10W
R520 4822 116 83178 RESISTOR 390R.1/10W

R521 4822 117 10056 RESISTOR 910R.1/10W
R522 4822 116 83178 RESISTOR 390R.1/10W
R524 4822 116 83168 RESISTOR 2.7kR.1/10W
R525 4822 117 10016 RESISTOR 1.2kR.1/10W
R526 4822 116 83145 RESISTOR 1kR.1/10W
R527 4822 117 10016 RESISTOR 1.2kR.1/10W
R528 4822 116 83178 RESISTOR 390R.1/10W

R535 4822 116 83185 RESISTOR 560R.1/10W

R550 4822 116 81636 RESISTOR 10kR.1/6W
R551 4822 116 81636 RESISTOR 10kR.1/6W
R554 4822 111 31003 RESISTOR 36kR.1/6W

C504 4822 126 11601 CAPACITOR 0.01UF.50V
C507 4822 126 11601 CAPACITOR 0.01UF.50V
C508 4822 124 80704 E CAPACITOR 47UF.6.3V
C509 4822 126 11601 CAPACITOR 0.01UF.50V

C512 4822 126 11833 CAPACITOR 27pF.50V
C513 4822 126 11833 CAPACITOR 27pF.50V
C514 4822 126 13319 CAPACITOR 2pF.50V
C515 4822 126 12885 CAPACITOR 22pF.50V
C516 4822 126 11601 CAPACITOR 0.01UF.50V
C517 4822 126 12397 CAPACITOR 15pF.50V
C519 4822 126 12485 CAPACITOR 18pF.50V

C521 4822 126 12383 CAPACITOR 0.001UF.50V

C550 4822 121 43972 F CAPACITOR 0.1UF.50V
C551 4822 126 11647 CAPACITOR 0.01UF.16V
C552 4822 126 12806 CAPACITOR 68pF.50V
C554 4822 126 11601 CAPACITOR 0.01UF.50V
C555 4822 124 80704 E CAPACITOR 47UF.6.3V
C556 4822 126 13287 CAPACITOR 0.1UF.25V
C557 4822 126 13287 CAPACITOR 0.1UF.25V
C558 4822 121 43972 F CAPACITOR 0.1UF.50V
C559 4822 126 13287 CAPACITOR 0.1UF.25V
C560 4822 126 13287 CAPACITOR 0.1UF.25V

C561 4822 121 43972 F CAPACITOR 0.1UF.50V
C562 4822 121 43972 F CAPACITOR 0.1UF.50V
C566 4822 126 12887 CAPACITOR 39pF.50V

L501 4822 157 60104 COIL 100UH

L502	4822 157 60104	COIL 100UH
L505	4822 157 62379	COIL 56UH
L506	4822 157 62379	COIL 56UH
L508	4822 157 62379	COIL 56UH
SLD1	4822 464 50974	SHIELD FRAME.PRE
CN501	4822 267 60384	CONNECTOR
CN502	4822 267 41106	CONNECTOR

PARTS FOR VR454/55

IC501	4822 209 32545	IC (AN3389SBNS-XE)
Q503	4822 130 60669	TRANSISTOR
Q504	4822 130 60669	TRANSISTOR
Q505	4822 130 60862	TRANSISTOR
Q506	4822 130 60669	TRANSISTOR
Q507	4822 130 60669	TRANSISTOR
Q508	4822 130 60997	TRANSISTOR
Q512	4822 130 63164	TRANSISTOR
Q513	4822 130 61524	TRANSISTOR
Q514	4822 130 60854	TRANSISTOR
D501	4822 130 32778	DIODE
D502	4822 130 32778	DIODE
D505	4822 130 32778	DIODE
D508	4822 130 80375	DIODE
R501	4822 116 83175	RESISTOR 3.3kR,1/10W
R509	4822 116 83163	RESISTOR 2.2kR,1/10W
R510	4822 116 83163	RESISTOR 2.2kR,1/10W
R514	4822 116 83191	RESISTOR 680R,1/10W
R515	4822 116 83145	RESISTOR 1kR,1/10W
R516	4822 116 83185	RESISTOR 560R,1/10W
R517	4822 116 83163	RESISTOR 2.2kR,1/10W
R518	4822 116 83163	RESISTOR 2.2kR,1/10W
R519	4822 116 83178	RESISTOR 390R,1/10W
R522	4822 116 83163	RESISTOR 2.2kR,1/10W
R523	4822 116 83163	RESISTOR 2.2kR,1/10W
R524	4822 116 83195	RESISTOR 820R,1/10W
R525	4822 116 83155	RESISTOR 1.5kR,1/10W
R526	4822 117 10016	RESISTOR 1.2kR,1/10W
R527	4822 116 83178	RESISTOR 390R,1/10W
R528	4822 117 10016	RESISTOR 1.2kR,1/10W
R531	4822 116 83145	RESISTOR 1kR,1/10W
R532	4822 116 83163	RESISTOR 2.2kR,1/10W
R535	4822 116 83151	RESISTOR 12kR,1/10W
R536	4822 117 10497	RESISTOR 43kR,1/10W
R539	4822 116 83333	RESISTOR 330kR,1/6W
R541	4822 116 83167	RESISTOR 270R,1/10W
R542	4822 116 83167	RESISTOR 270R,1/10W
R543	4822 116 83167	RESISTOR 270R,1/10W
R544	4822 116 83167	RESISTOR 270R,1/10W
R545	4822 116 83195	RESISTOR 820R,1/10W
R546	4822 111 30937	RESISTOR 0R,1/6W
R548	4822 116 83157	RESISTOR 150kR,1/10W
R550	4822 117 10499	RESISTOR 180R,1/10W
R552	4822 116 83144	RESISTOR 100R,1/10W
R554	4822 116 81543	RESISTOR 820R,1/6W
C504	4822 126 11601	CAPACITOR 0.01UF,50V
C505	4822 126 11601	CAPACITOR 0.01UF,50V
C506	4822 126 11601	CAPACITOR 0.01UF,50V
C507	4822 126 12444	CAPACITOR 680pF,50V
C508	4822 126 12397	CAPACITOR 15pF,50V
C510	4822 126 12384	CAPACITOR 33pF,50V
C511	4822 126 11601	CAPACITOR 0.01UF,50V
C512	4822 126 12884	CAPACITOR 12pF,50V
C513	4822 126 11858	CAPACITOR 470pF,50V

C514	4822 126 12885	CAPACITOR 22pF,50V
C515	4822 126 12884	CAPACITOR 12pF,50V
C516	4822 126 12797	CAPACITOR 0.1UF,16V
C517	4822 126 11601	CAPACITOR 0.01UF,50V
C518	4822 126 12404	CAPACITOR 390pF,50V
C521	4822 126 11601	CAPACITOR 0.01UF,50V
C522	4822 121 43972	F CAPACITOR 0.1UF,50V
C523	4822 126 13322	CAPACITOR 0.033UF,50V
C524	4822 126 12806	CAPACITOR 68pF,50V
C525	4822 126 12428	CAPACITOR 56pF,50V
C526	4822 126 13322	CAPACITOR 0.033UF,50V
C527	4822 126 11601	CAPACITOR 0.01UF,50V
C528	4822 126 11601	CAPACITOR 0.01UF,50V
C529	4822 126 13322	CAPACITOR 0.033UF,50V
C530	4822 126 12806	CAPACITOR 68pF,50V

C531	4822 126 12428	CAPACITOR 56pF,50V
C532	4822 126 13322	CAPACITOR 0.033UF,50V
C533	4822 121 43972	F CAPACITOR 0.1UF,50V
C534	4822 126 11601	CAPACITOR 0.01UF,50V
C536	4822 124 23874	E CAPACITOR 47UF,16V
C537	4822 124 80704	E CAPACITOR 47UF,6.3V
C540	4822 126 12443	CAPACITOR 47pF,30V
C541	4822 126 11602	CAPACITOR 39pF,30V
C542	4822 121 43972	F CAPACITOR 0.1UF,50V
C543	4822 126 11601	CAPACITOR 0.01UF,50V
C549	4822 126 13287	CAPACITOR 0.1UF,25V
C550	4822 126 11601	CAPACITOR 0.01UF,50V
C551	4822 126 11833	CAPACITOR 27pF,50V
C554	4822 126 12462	CAPACITOR 0.01UF,50V

L501	4822 157 71261	COIL 47UH
L503	4822 157 60104	COIL 100UH
L504	4822 157 62379	COIL 56UH
L505	4822 157 62377	COIL 22UH
L506	4822 157 62378	COIL 47UH
L507	4822 157 62378	COIL 47UH
L508	4822 157 62373	COIL 120UH
L509	4822 157 62377	COIL 22UH
L510	4822 157 62375	COIL 18UH

SLD1	4822 464 50974	SHIELD FRAME,PRE
CN501	4822 267 31794	B TO B CONNECTOR,(2-19) MAIN
CN502	4822 267 41117	CONNECTOR,(1-6) UPPER DRUM

DECK TERMINAL BOARD ASSEMBLY

IC1	4822 209 31732	IC (BA6418)
Q2	4822 130 63376	END SENSOR
D1	4822 130 83429	LE DIODE
D2	4822 130 83428	ZENER DIODE
R1	4822 116 81536	RESISTOR 1kR,1/6W
R3	4822 116 82084	RESISTOR 330R,1/6V
R4	4822 117 10435	RESISTOR 82R,1/6W
R6	4822 116 82084	RESISTOR 330R,1/6V
R7	4822 116 81727	RESISTOR 3.3kR,1/6W
C1	4822 126 10039	CAPACITOR 0.01UF,6V
C3	4822 124 80383	E CAPACITOR 220UF,16 V
PS1	4822 130 82705	PH INTERRUPTER
PS2	4822 130 82705	PH INTERRUPTER
WR1	4822 321 62499	PARALLEL WIRE
CN1	4822 267 51364	FFC CONNECTOR,(118) MAIN

CN2	4822 265 41137	7PIN CONNECTOR,(1-7) CAP MDA
CN3	4822 265 30908	4PIN CONNECTOR,(1-4)
		CASSETTE HOUSING
CN5	4822 265 20646	CONNECTOR,(1-2) LOAD MOTOR

CASSETTE HOUSING BOARD

Q2	4822 130 62798	PHOTO TRANSISTOR
C1	4822 126 10039	CAPACITOR 0.01UF,16V
S1	4822 276 13432	PUSH SWITCH
CN2	4822 267 41014	4PIN SOCKET,(1-4) DECK TERMINAL

TOOLS

4822 397 30262	ALIGNMENT TAPE (SP)
4822 397 30261	ALIGNMENT TAPE (LP)
4822 395 50262	ADJUSTMENT DRIVER
4822 395 50262	TORQUE GAUGE
4822 395 90615	BACK TENSION CASSETTE GAUGE
4822 395 90916	A/C HEAD POSITIONING TOOL
4822 395 90904	ROLLER DRIVER
4822 395 90915	PRESETTING UNIT
4822 395 90957	SMC REPLACEMENT TOOLS